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Montreal Medical Journal

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VOLUME XXXIV

1905

MONTREAL:
PRINTED BY THE GAZETTE PRINTING COMPANY.

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THE

MONTREAL MEDICAL JOURNAL.

VOL. XXXIV. JANUARY, 1905. No. 1.

HEALTH RESORTS IN ARIZONA.

BY

WM. VAUGHAN.

Howsoever physicians may differ with respect to other factors in the treatment of tuberculosis, they appear to be unanimous in regarding pure air as of the first importance. No part of the North American continent offers so great advantages for the open air treatment as the arid region in the southwest of the United States. Of the vast area embraced in this region the territory of Arizona, by reason of its wider diversity of climate, its range of altitude from sea level at Yuma to 6,800 feet at Flagstaff, and the greater number of suitable resorts for invalids, deserves the most attention. I remember Dr. Trudeau saying to one of his patients in the Adirondacks, "How many hours a day do you spend out-of-doors? As many as eight? Do you know that it is quite difficult to spend eight hours out-of-doors daily?" But in Arizona sufferers from tuberculosis can and do spend as many as twenty-two hours, or even more, out of every twenty-four in the open air, with comfort and pleasure, all the year round. Everywhere throughout the territory, the air is singularly clear, tonic, and dry. During a year's residence, there was not one day on which the sun did not shine brightly for several hours.

But the sufferer from tuberculosis needs more than climate. He requires suitable accommodation and good food, and he may require the attendance of a physician. These are not everywhere obtainable, and the physician in the east, who has no personal knowledge of Arizona, is generally unable to direct or advise his patient where to settle. As a result, the patient arrives in the Territory in a condition, more or less, of bewilderment as to his destination, with his temperature increased by a fruitless effort to discriminate between the merits of Phœnix, Tucson, and Prescott, as presented in the highly coloured advertisements of two rival railway companies. Some observations, therefore, on the principal health resorts in Arizona may be of use to Montreal physicians.

It is possible for the patient, when he has been some little time in Arizona, to secure the accommodation and the comforts he requires at one of the numerous ranches in the vicinity of towns in the southern part of the Territory. This is the cheapest way of living, but life on a ranch presents unknown terrors to the sick tenderfoot, and he very naturally seeks for quarters in one of the established resorts. The best of these are Phœnix, Tucson, Oracle, Castle Creek, Hot Springs, and Prescott.

Phœnix, with an altitude of 1,180 feet, is the largest city in the Territory, and the most hospitable to consumptives, several thousands of whom flock to it for the winter months. Its population is variously estimated at from 12,000 to 18,000, according to the time of year, but on comparison with the census these estimates appear to be unduly high. Its municipal improvements include a waterworks system, gas and electric lighting plants, a telephone system, and an electric street railway. For the care of invalids there are besides a sanatorium and a Sister's hospital, several hotels and restaurants and a considerable number of lodging houses and furnished rooms—while good accommodation may be had at some of the ranches in the outlying country. The hotels are generally unsatisfactory; the principal one has excellent accommodation, but provides a poor table. Many of the lodging houses are attractive; and a number of them are provided with screened balconies for sleeping-out, but the cooking, as a rule, is ill done. Furnished houses and cottages are to be had for the winter, and, if domestic help can be got, the patient who has sufficient means finds this by far the best way of living. There are good roads for driving and horseback riding, and there is also a small golf course—the only one in Arizona.

Situate in the centre of the Salt River Valley, the climate of Phœnix during the months of October to April, inclusive, is delightfully mild and sunny. The thermometer rarely falls to the freezing point. The coldest month, February, has a mean temperature of 54°, a mean maximum temperature of about 75°, and a mean minimum temperature of about 43°. There is, therefore, between nightfall and sunrise, a daily drop of 30°. This is the case throughout the year. In the winter months a decided chill is felt at sunset, overcoats are *en règle*, and log fires are comforting. The annual precipitation is about 7 inches. The humidity has very markedly increased in recent years with the development of irrigation, but even now the mean relative humidity for the year is only 38 per cent., being noticeably less in the summer months than in January and February. During the year 1903, Phœnix enjoyed 266 clear days, 60 partly cloudy days, and 32 cloudy. The average hourly velocity of the winds is between four and five miles. The months

of May to September, inclusive, are unbearably hot, and, during that time Phœnix is abandoned by its health-seeking population. It is said, in the Territory, that patients do particularly well in the hot, dry weather, but when the thermometer goes daily above the hundred mark, the heat becomes decidedly unpleasant.

Throughout the year Phœnix suffers frequently from desert sandstorms, which, though usually of short duration, are very disagreeable.

Tucson, altitude 2,400 feet, which lies to the southeast of Phœnix, is the second largest city in the Territory, and is the seat of the University of Arizona. Having a population of about 7,500, it boasts, like Phœnix, of all modern municipal improvements, and has its quota of hotels, lodging-houses, etc. These are by no means so numerous as those of Phœnix, but are similar in general characteristics. Mention, however, should be made of a new hotel, opened in 1903, which is reported to be the finest in the Territory, but, being built in the Mission style and having no grounds about it, is ill-adapted to the entertainment of invalids. There are good roads for riding and driving.

The climate of Tucson very closely approximates that of Phœnix, its annual mean temperature being only 2° less. The months of May to September, inclusive, are uncomfortably hot. The annual precipitation is about 8½ inches of rain, and there is an occasional light fall of snow. Humidity data are not obtainable, but the relative humidity probably averages considerably less than that of Phœnix.

Oracle, altitude 4,500 feet, lies 40 miles due north of Tucson, and is reached by a hard stage drive from that city. The place may be described as consisting of two hotels, a few cottages, and a number of tents erected by invalids. The hotels are only fair, and the life altogether is on the rough side. The driving is fairly good.

The annual mean temperature is 62.7°, the mean for the winter months being 46°, and for July and August 79.2° The maximum summer heat, however, rarely registers 100°, and creates no discomfort, while the thermometer shows about 15° in the coldest weather. The annual precipitation amounts to 16 inches of rain and about 12 inches of snow. The mean relative humidity is very low, and Oracle enjoys as great a percentage of possible sunshine as Phœnix or Prescott, viz., 85 per cent. Winds are very frequent, but no record of their average velocity is available.

Castle Creek Hot Springs, altitude 1,900 feet, lies in the Bradshaw mountains, about 50 miles northeast of Phœnix and about 28 miles, by a stage drive, from the nearest railway station. The only accommodation to be had is at the Castle Creek Hotel, which entertains guests during the months of November to April, inclusive, and is

closed for the summer. The hot springs furnish the hotel with an unceasing stream of water at a uniform temperature of 114°. Of slight medicinal value, this water, when cooled, makes a delightful table water. The hotel has all modern conveniences, and, while comparatively expensive, is by far the most comfortable in Arizona, and is so constructed as to allow of invalids getting a maximum amount of fresh air. It is well managed, and has a resident physician. There are no roads for driving, but horseback riding on the mountain trails is much indulged in. Entirely surrounded by hills, the climate of Castle Creek, like that of Tucson, very closely approximates that of Phœnix in respect of temperature and precipitation. The hills, however, effectually protect it from the sand storms which are so unpleasant a feature of Phœnix, and the relative humidity is phenomenally low. During the season 1903-1904 this rarely exceeded 30 per cent., was on several days inappreciable, and averaged less than 15 per cent.

Prescott, altitude 5,320 feet, with a population of about 5,000, is a prettily situated mountain town, 150 miles north of Phœnix. It is well built and possesses up-to-date conveniences, including an infant street car service, and a Sisters' hospital. Accommodation for invalids, however, is very scanty. The hotel service is extremely poor, and the lodging-houses refuse to receive sick guests. Until lately, sufferers from tuberculosis have, on that account, had to pass Prescott by, but a beginning has at last been made by the enterprise of a young Canadian doctor,* a graduate of McGill, who has established a camp for the open-air treatment. This is located in a pine grove in a sheltered part of Prescott's mountain park, and from my own experience and an exchange of notes with fellow-sufferers, I think it compares very favourably indeed with any establishment in Arizona. There are good roads for riding and driving and a nice club where good meals can be had by both sexes at a very reasonable price.

Prescott has an advantage climatically over the other cities which I have mentioned in being an all-the-year-round resort. The temperature in the hottest months, July and August, is thoroughly enjoyable, while the winter days are bright and sunny. The air is at all times more bracing and tonic than at lower altitudes in the Territory. The maximum summer temperature is about 95° to 98°, and the mean for the months of July and August 73° and 70° respectively. The summer nights are deliciously cool, and a blanket is always needed. The mean temperature for the coldest months, January and February, is 34° and 38° respectively. The nights during this season are quite cold, with a mean minimum of about 18°, but the daily maximum temperature

* J. W. Flinn, M.D. (McGill, '95).

varies between 50° and 60°. Both the cold and the heat are tempered by a very low relative humidity, and the patient is untroubled by sandstorms. During 1903 the precipitation amounted to 16.74 inches of rain, falling chiefly, in sharp, short thunderstorms, in the summer season. There was also a total fall of 18 inches of snow (unmelted) which, under the influence of the bright sunshine, very quickly disappears.

The climate of Prescott challenges comparison with that of Denver and that of Colorado Springs. Thirty feet higher than Denver, and 750 feet lower than Colorado Springs, it has an annual mean temperature of 53°, or some 3° higher than both. The summer temperatures are very nearly alike, but Prescott enjoys a less severe winter, its average wind velocity is considerably lower, and its relative humidity is less than a half of that of either of the other two places. Its percentage of possible sunshine is also higher. In 1903 Denver had a total of 199 clear days, 105 partly cloudy, and 61 cloudy; whereas Prescott had 248 clear days, 96 pretty cloudy, and 21 cloudy.

Flagstaff, altitude 6,800 feet, is noticed in the railway's publications as a health resort, but all my inquiries have resulted in the information that no suitable accommodation for invalids can be obtained there. Its winter is severe, and its altitude is considered to be objectionably high for consumptives.

It may be desirable to add that at each of the five resorts, Phœnix, Tucson, Oracle, Castle Creek, and Prescott, the patient can secure the attendance of reliable physicians, nurses can be obtained, and good milk and fresh eggs are to had in abundance; and that places distant from the railway have to rely largely on the canned product as a substitute for fresh vegetables. No sick person should come to Arizona without money. The cost of living is high, and employment can rarely be obtained.

QUININE AMAUROSIS—WITH REPORT OF A CASE.

BY

G. H. Mathewson, B.A., M.D.

During the early part of the present year I had the privilege of studying a case of Quinine Amaurosis, and became so deeply interested in the matter myself, that I thought a short *résumé* of the subject might prove of interest to the members of this society.

According to H. C. Wood, of Philadelphia, the alkaloid quinine was first definitely separated from the other constituents of cinchona bark in the year 1820, and, as it was a much stronger remedy than the bark, soon came into great favour with the profession, especially as a remedy

Read before the Montreal Medico-Chirurgical Society, 14th November, 1904.

for malaria. Although, as early as 1829, Berandi reported that in experimenting with healthy persons, he had noted tinnitus aurium, and temporary amblyopia after doses of from 15-20 grains of quinine, it was not until the year 1841 that we find a record of fully-developed blindness from the toxic effects of the drug. In that year Giacomini reported a case which occurred in the practice of his friend, Dr. Giacometti, of Mantua. This case is of special importance not only on account of its priority, but still more so from the fact that the patient before taking the quinine was in robust health, so that there could be no doubt as to the causal relation between the alkaloid and the symptoms. A full description of the case can be found in the Dictionaire de Médecine (2me edition, Paris, 1842, art. Quinine), which can be found in the library of McGill Medical College, and from which I have taken the following abstract:—"A man between 45 and 50 years "of age took at one dose between 180 and 200 grains (12-15 grammes) "of sulphate of quinine, which he mistook for cream of tartar. He "was seized at first with precordial pain, nausea, vertigo, and faintness, "and was unable to make the least movement. Eight hours after the "ingestion of the drug Dr. Giacometti saw him, and noted his con-"dition as follows—Temperature above normal, extremities cold, lips "and fingers livid, breath fetid, respiration slow and sighing, pulse "regular but very feeble, voice faint, pupils dilated, sight and hearing "almost abolished, very thirsty. He gradually improved but was un-"able to stand up on the fifth day. Sight and hearing improved daily, "but only after a long time were they restored." While it is stated that sight was restored, we cannot be certain that the visual fields were normal. Garofolo of Gratz, and DeGouvea of Rio Janeiro have each reported a case where blindness was caused in a healthy individual by the ingestion of quinine. Garofolo's patient took 225 grs. of quinine in mistake for magnesia, while DeGouvea's patient attempted suicide by taking 300 grs. at a dose. In 1847 Dr. Wm. Baldwin, an American physician, reported the case of a negro girl, six years of age, who was given by his orders 24 grs. of quinine in one day, 12 grs. the following day and 8 grs. on the third day, or a total of 44 grs. in three days. Shortly after the last dose the child became restless, then blind with marked dilatation of the pupils, and a few hours later died. Dr. Baldwin quotes another case that occurred in the practice of a friend, in which blindness came on after large doses of quinine. He was so impressed by these two cases that he performed a series of experiments on dogs, and found that after toxic doses of quinine, the dogs invariably showed restlessness, became blind, with great dilatation of the pupils, and later had convulsions, became comatose and finally died.

He published a vigorous article citing these facts with reports of

the two cases mentioned above, and strongly deprecating the large doses in which quinine was given at that time.

Some idea of the reckless way in which the drug was prescribed in those days may be gathered from the following examples, which could easily be multiplied from contemporary literature.

A certain Dr. Wharton in a paper in the *American Journal of Medical Sciences,* published in 1844, states that his routine treatment for severe cases of malaria was the administration of eight grains of quinine every hour (or every second hour, according to the severity of the case), for 24 to 48 hours, *i.e.*, 96 to 192 grains in 24 hours, and further states that in one severe case he gave 240 grains in this manner, *i.e.*, in about 30 hours, without bad results.

FUNDUS IN QUININE AMAUROSIS (DIAGRAMMATIC.)

(1.) The spot at macula is much larger than that seen in cases of embolism of the central artery of the retina.

(2.) All the vessels shown are veins, except the two small twigs at nasal side of optic disk, which are arteries.

In France a certain Dr. Bazire gave his wife, who had malaria, 240 grains in a short time and then 375 grains at a single dose with the result that she became blind and unconscious. At this juncture, fortunately for her, the doctor himself developed malaria and at once began an energetic course of treatment on himself. He took at a dose 900 grains of quinine, and then followed this up by taking *five ounces* during the next ten days, from the effects of which he died.

After a protracted illness Mde. Bazire recovered a fair amount of vision. From time to time cases of blindness from overdoses of quinine were reported, but it was not until after the discovery of the ophthalmoscope by von Helmholtz, in 1851, that the interior of the living eye could be examined in situ, and the description of the symptoms produced in man by the toxic effects of quinine was rounded out by a picture of the fundus oculi in this condition.

According to de Schweinitz the first complete description of the changes that occur in the fundus oculi in fully-developed cases of quinine amaurosis was given by Voorhies in 1879. Voorhies' patient was a young lady, who, while visiting in a part of the country where malaria was prevalent, fell ill with this disease. On the advice of a friend (not a physician) she took an ounce of quinine on each of three successive days. On the second day she became much prostrated, with a feeble pulse and marked pallor of the face. Her hearing was slightly impaired, but she was absolutely blind. The pupils were of normal size and reacted to light. There was no trace of retinal vessels whatever, and the optic discs were chalky white. The choroidal vessels were empty and the fundus appeared of a pale yellow colour. Under inhalations of amyl vitrite and injections of strychnine she gradually improved (though it was ten weeks before any improvement could be noted), and finally could read J. No. i., but had extreme contraction of the visual fields which was permanent. When examined, more than a year later, no retinal vessel contained blood except one small twig in the left eye. The optic discs were still perfectly pale, and the visual fields extremely contracted, the greater (vertical) diameter of the field was only four inches at a distance of two feet, *i.e.*, the patient had telescopic vision and must have experienced considerable difficulty in walking about. The vertical diameter of the visual field in my own left eye is 34 inches at a distance of 2 feet, so that the patient's field had been reduced to less than one-eighth of what it should be.

In 1881 Knapp of New York described three cases, and in the same year Dr. Buller described a case which occurred in Montreal. Since that time many cases have been recorded, and in 1889 Prof. I. E. Atkinson, of the University of Maryland, published a valuable paper entitled, "Some of the Graver and Rarer Forms of Cinchonism," in which he strongly condemned the reckless way in which the profession prescribed quinine, and in support of his position gave abstracts of forty-nine cases of quinine blindness drawn from the medical literature of all countries.

The history of my case is as follows:—On March 4th, 1904, Mrs. M., a healthy woman, was confined. The labour (which was her second)

was quite normal and the case progressed favourably until March 6th, when symptoms of septicæmia appeared. On March 7th, besides local treatment, her physician prescribed a mixture containing 3¾ grains of quinine sulphate and 5ß m. of Arom. Sulph. Acid to the dose, 4-6 times daily. This mixture did not seem to agree with the patient, as on several occasions she vomited after having taken it, so, on March 9th it was stopped, and powders, each containing 10 grs. of quinine sulphate, with 15 grs. of bismuth subnit. and 3 grs. of soda bi-carb. were substituted. These powders were to be taken three times a day in divided doses. On March 12th the patient was in a muttering delirium. On the 14th she was still delirious, and it is worthy of note that a prominent feature of the delirium was the occurrence of visual hallucinations,—she saw "street-cars upside down on the ceiling." On the following morning it was discovered that she was absolutely blind, with widely-dilated pupils which did not react to light. Her hearing was impaired also, and she at different times spoke of the noise in her ears. Her physician states that she could always be roused when spoken to in a rather loud voice, and that her apparent deafness was due in part at least, to her mental condition. At the time when the blindness came on, the patient had taken between 150 and 180 grains of quinine during a period of eight days. The total quantity prescribed was 202½ grs. but of this many doses had not been given, owing to the condition of the patient and the indifferent care given her by those of her household.

About this time, March 15th, the bodily temperature began to maintain a lower level, and on the succeeding days the amount of quinine was lessened. The patient gradually passed from a state of muttering delirium into a condition of dullness and apathy, and was in this latter condition when admitted to the Western Hospital, under Dr. Perrigo, on March 24th. Her pelvic condition was diagnosed as salpingitis and she was given, in addition to local treatment, 2 grs. of bisulphate of quinine t.i.d. which latter was only stopped when I suggested that her blindness was probably due to quinine intoxication. On March 25th I made a careful examination of her eyes with the following result:

It is to be noted that while this examination was made ten days after the onset of the blindness, it is likely the appearance of the fundi did not differ much from the initial condition since quinine had been given continuously, and the experience of Nettleship, Demicheri, Stathakoupolos and others proves that even small doses of the alkaloid will cause a return of the symptoms in those who have suffered from quinine blindness. The condition was the same in the two eyes,—pupil widely dilated and reacts but slightly to light. Tension normal.

Vision=P.L.? The optic disc is extremely pale, with a dull surface, such as is seen in optic atrophy, and its border is sharply defined. There is a slight haziness of the fundus (due to opacity of the retina), which is more marked about the optic disc and macula than elsewhere. In the macular region there is a rounded red spot about 1-3 the size of the optic disc. This spot is not of an intense red colour, but rather a fainter red than the pericentral area of the normal macula, and, although it stands out rather prominently from the hazy retina, it is not sharply defined at its periphery. The most striking feature in the fundus is the extreme constriction of the retinal arteries. On the optic disc a thin column of blood can be seen in two or three of the largest arterial trunks, but even this faint red thread disappears before the edge of the disc is reached, except in one or two branches, where it can be seen to continue to a point just beyond the disc border. Elsewhere in the retina the arteries are absolutely bloodless and either can not be seen at all or appear as bloodless greyish-white structures, like the "ghosts of vessels," as one writer has aptly said. Even on the optic disc some of the large arterial branches contain no blood. The veins were slightly paler than normal, and showed more constriction where they entered the optic nerve, but otherwise exhibited no abnormality. This slight pallor of the veins was probably due, in part at least, to the haziness of the retina. Although the eyes were examined almost every day, no change was noticed until April the 7th, when it was found that the pupils reacted more promptly to light, and the patient was able to see fingers moving, when held close to the face. On April 10th marked nystagmus was noted. On April 11th she could count fingers held close to the face, and it was noted that the retinal arteries contained more blood. At this time it was observed that on or near the optic disc the arteries contained a narrow column of blood, as described above, but as one followed the course of any of these vessels into the retina this blood column disappeared entirely and the vessel was quite bloodless until the equatorial region of the eye was reached, where it rather suddenly became well filled with blood.

Several vessels which on the optic disc and in the neighbouring part of the retina contained no blood were well filled towards the equator of the eye.

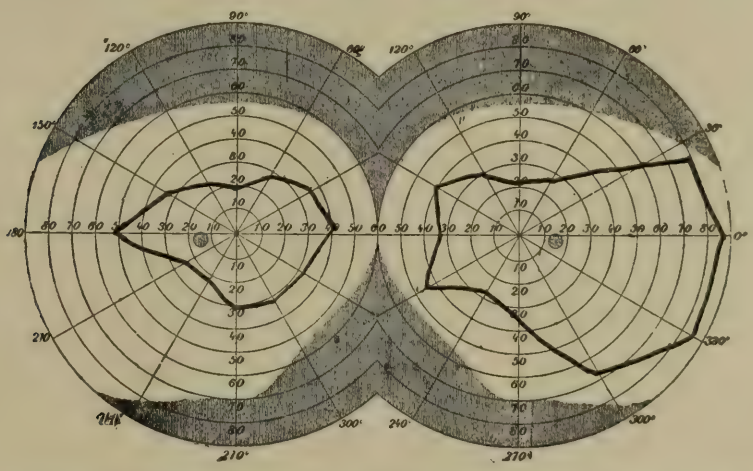
In none of the arteries was there to be seen at any time the appearance that has been described as "blood cylinders," *i.e.*, multiple breaks in the blood column.

From this time on vision gradually improved. On April 15th V= fingers at 15 feet. Field much constricted. At this date one could see with the ophthalmoscope many dilated capillaries arranged in a

radial manner about the optic disc, which latter was still of chalky whiteness. This condition was not present earlier. On April 29th patient could go about the ward, but walked slowly and aided herself by holding on to beds, etc. V both eyes=F. 20 feet. May 11th nystagmus has been absent for some days. Pupils of medium size and react promptly to light. The dilated capillaries referred to above are not nearly so noticeable.

All the retinal arteries now contain a continuous bloodstream, from the centre of the optic disc to the equator of the eye. The arteries are, however, better filled toward the equator. R. V.=6-36. L. V.=6-36. The visual fields are still very much constricted and the construction is concentric. The patient is absolutely blind for red and green, but can distinguish blue with a fair degree of certainty. The accompanying charts show the extent of the fields on this date. On May the nineteenth the state of vision was R. E.=6-36 and Jaeger No. 6; L. E.=6-36 and Jaeger No. 9.

R.E. Fields for White. L.E.



Red and Green are not recognized in any part of field, while Blue can be recognized with a fair degree of certainty at point of fixation.

We have here very poor vision and the narrowing of the fields makes locomotion more difficult still. Her physician was of the opinion that the patient was changed mentally, being more easily excited to laughter, etc., than she had been before her illness.

As regards the treatment that was given the case, I followed that usually adopted, namely, tincture of nux vomica, with nitroglycerine. Amyl nitrite inhalations were given on three occasions. Many drugs have been vaunted, such as potassium iodide, amyl nitrite, strychnine, nitro glycerine, and some authors have spoken highly of the use of electricity, but it is very doubtful if any treatment has much influence on this condition. Of the cases on record a large proportion have

recovered, more or less completely, with no treatment beyond the withdrawal of the quinine. The improvement in my case began almost immediately after the quinine was stopped. The symptom-complex that we call quinine amaurosis has been summed up by Prof. Atkinson (who, by the way, is not an oculist, but a physician) as follows:— 1. Transitory blindness, complete or incomplete, usually developing suddenly. "This blindness may be more complete than in any other recoverable condition and is comparable to the blindness of optic atrophy" (Browne). 2. Colour blindness. As sight returns most patients will be found to be colour blind, partially or completely. The colour sense gradually returns and may ultimately become restored. 3. Wide dilatation of the pupils. The pupils are irresponsive to light, but are said to respond to accommodative effort. It is to be inferred that the dilatation is due to the blindness and that there is no implication of the third or sympathetic nerves. (4). There is pallor of the optic discs and extreme diminution of the retinal vessels, both veins and arteries. In many cases this is permanent. In cases examined early by the ophthalmoscope a whitish haze with cherry-colored spot has been observed at the macula, as in cases of embolism (Browne, Buller, Gruening. (5). There is contraction of the visual field. This is extreme and expands slowly. There is no reliable evidence that it ever regains its normal extent. "The contraction is concentrical or elliptical, with the longest axis in the horizontal direction" (Knapp). (6). Impairment of hearing (at times of total deafness), with tinnitus appears to be present almost invariably.

Besides these symptoms, which may be considered as practically of constant occurrence, there are many which are less common, such as nystagmus, anæsthesia of the cornea, ring scotoma, etc.

In one case (Dickinson's) there was a true optic neuritis which, as Atkinson points out, was probably due to malarial infection and not to the quinine. Optic neuritis from malaria has been frequently seen (Galezowsky, Hammond, Poncet). In addition to the ocular symptoms, certain general symptoms can generally be found, such as gastric disturbance (vomiting, etc.), diarrhœa, difficulty in respiration delirium (sometimes with visual hallucinations), prostration and mental hebetude. As the patient in the vast majority of cases is seriously ill before taking the quinine, these constitutional disturbances are frequently ascribed to the toxæmic effect of the disease, and do not attract any special attention. The amount of quinine which must be taken before blindness is induced is not as yet accurately determined, but in most of the recorded cases of complete amaurosis a large quantity has been taken either at a single dose or in divided doses spread over a short period.

Geo. de Schweinitz states that the amount has varied from 15 grs. to 1 oz. in twenty-four hours. The duration of the blindness varies considerably, in some cases lasting but a few hours, in others for weeks and even months, while in two cases, those of Calhoun and Claiborne, the blindness was permanent. In my case, complete blindness lasted for over three weeks; in Voorhies' case for ten weeks, while in that of Michel the blindness was total for seven months. In typical cases, and the majority of recorded cases are typical, there should be no difficulty in making a diagnosis. The sudden onset of complete binocular blindness, coming on simultaneously in the two eyes, associated with the fundus changes described above, and accompanied by tinnitus aurium and deafness in a patient who has been taking quinine in large quantities, makes a clinical picture which is quite pathognomonic. Complete embolism or thrombosis of the central artery of the retina produces changes in the fundus much like those seen in quinine amaurosis, but simultaneous occlusion of the central retinal artery in the two eyes must be extremely rare, if indeed it ever occurs at all. Lucien Howe says, "Simultaneous embolic plugging of "the central artery in each eye has been described, but it is an ex- "ceedingly rare condition," but gives no authority for his statement. I have not been able to find the record of any such case, but A. von Graefe and Nettleship both report cases where both eyes were affected by embolism of the retinal artery, but they were not attacked simultaneously. In Von Graefe's case the second eye was not affected until two years after the other had been lost, while in Nettleship's case twelve days had elapsed before the second eye was attacked.

The patients who have embolism nearly always have arterial disease, and besides this they do not present the other symptoms so characteristic of cinchonism. Further, the blindness in embolism or thrombosis is almost, without exception, permanent. Occasionally acute retrobulbar neuritis may cause sudden blindness, and a certain amount of retinal ischemia, but in such cases there is orbital pain, headache, pain on moving the eyeball, and if they recover, the peripheral field is restored before the central, while the reverse order is seen in quinine amaurosis. More than one hundred cases of this peculiar condition have been placed on record, seventy-one of which I have been able to study, and I have compiled the following table showing the final state of vision:—

1.—No. of cases where vision became normal or nearly so..... 38
2.—No. of cases where vision was permanently impaired to a moderate degree 21
3.—No. of cases where vision was permanently impaired to a high degree 4

4.—No. of cases where vision was fair, but the visual fields were so contracted that the patient had difficulty in getting about	4
5.—No. of cases where the blindness remained complete and permanent	2
6.—No. of cases where death resulted	2
Total	71

In two cases, it might be added, there was permanent deafness. Grouping classes 1 and 2 together, we have 59 cases that recovered good vision out of a total of 71 cases, or 84 per cent., so that while the blindness is extreme and recovery may be long delayed, we can say that the prognosis for the recovery of vision is good.

When we consider the wholesale way in which quinine is prescribed, especially in malarial districts, we are struck by the fact that during the eighty years that have elapsed since quinine has been in use only about 100 cases of quinine amaurosis have been recorded, i.e., one case and a quarter per year, and the smallness of the number seems the more strange when we consider the striking nature of the symptoms in this condition. Granting that some cases may be overlooked in out-of-the-way localities, the fact remains that in places where oculists can be consulted very few cases are seen, and we are forced to the conclusion that there must be an unusual susceptibility to quinine in those in whom the amaurosis develops. This susceptibility may be constant, and correspond exactly to idiosyncrasy to belladonna, or to potassium iodide or calomel, which are known to every doctor, or, on the other hand, the idiosyncrasy may be due to lowered vitality of the individual at the time. Knies has pointed out that those who have suffered from quinine amaurosis have, almost without exception, been in very poor condition generally from the effects of malaria or typhoid fever, etc. The susceptibility of human beings to quinine varies to a remarkable degree. H. C. Wood states that he saw complete temporary amaurosis in a lady after the ingestion of 12 grs. of quinine sulphate, and Geo. E. de Schweinitz has seen the same effect after 15 grs. given during a period of 24 hours.

On the other hand, it is well known that many persons can stand large doses of quinine without bad effect. Dr. Clapton, for instance, cites the case of a soldier who took an ounce at a dose with no more effect than a mild stupor, while de Schweinitz says that, when a house-surgeon, he gave 80 grs., in less than 24 hours, to a man who had malaria without causing the slightest disturbance of sight or hearing, and a multitude of similar cases might be cited. H. C. Wood thinks

that in these cases, where large doses are taken with impunity, a large proportion of the drug passes unchanged through the intestines. It is possible, too, that in some cases the patient has become habituated to the drug, and so less susceptible. While these extremes of susceptibility are to be found, the experiments of Barabaschew clearly prove that large doses of quinine are never without danger. Barabaschew gave to a series of healthy individual doses of from 2.4 to 3.6 grammes (41 to 55 grs.) of quinine sulphate, with the following results:—

(1) Acute gastritis, with temporary increase in central visual acuity.

(2) Pallor of the face, dizziness, in some cases going on to loss of consciousness, somnolence, ringing in the ears, and miosis rapidly passing into mydriasis.

(3) Marked constriction of the retinal vessels and pallor of the optic disc. Pulse at first more rapid, then slowed.

(4) Concentric contraction of the visual fields.

(5) Lessening of visual acuity, and in one case temporary blindness. This blindness lasted half a minute, and recurred ten times at intervals of 10 to 15 minutes. No colour blindness. Once temporary opacity of the retina.

We have here all the cardinal symptoms of quinine poisoning in less degree, so that we must conclude that quinine in large doses cannot be given even to healthy individuals without danger, while to those whose vitality is exhausted by such diseases as septicæmia, typhoid fever, or pneumonia the danger becomes imminent. It would seem that the use of quinine in large doses should be confined to cases of malaria, and used even here with caution, for it is well known that the alkaloid has no special effect on septic disease, as was formerly believed, and for reducing temperature we have many more efficacious means, such as cold sponging and cold baths and the coal tar products (acetanilid, etc.).

The pathology of the ocular changes in quinine amaurosis is now pretty thoroughly known, thanks to the studies of Brunner, de Schweinitz, Barabaschew, Ward Holden, Druault, and others.

Ward Holden has demonstrated that in dogs blinded by quinine the ganglion cell and nerve fibre layers of the retina are degenerated, while the rest of the retina, including the rods and cones, shows little change. He concludes that this degeneration is due to insufficient nourishment because of the constriction of the retinal arteries. "The degeneration "of this part of the retina is followed by an ascending atrophy of the "optic-nerve fibres, which extends up to the termination of "the nerve fibres in the external geniculate body and pul-"vinar of the thalamus." He found, clinically, that the amblyopia did not occur unless there was constriction of

the retinal arteries. "The retinal vessels supply the six inner layers "of the retina, while the other layers are supplied by the choroidal "vessels. When the retinal circulation is absolutely stopped, as in "complete embolism of the central artery, these inner six layers "atrophy, the nerve fibres, ganglion cells and cells of inner nuclear "layer all disappear, while outer nuclear layer rods and cones and "pigment epithelium remain normal. With reduced but not abolished "nutritive supply in quinine poisoning, the more delicate elements, "that is, those most responsive to nutritive disturbances, namely, the "nerve fibres and ganglion cells, atrophy, while the more resistant cells "of inner nuclear layer are not altered."

In 1900 Dr. A. Druault, of Paris, published his treatise on the pathogeny of quinine amaurosis, and his conclusion is that the blindness is not due to the circulatory disturbance, but to the action of the quinine on the cells of the ganglion-cell layer of the retina.

He found that in dogs, as early as ten hours after the administration of quinine, degenerative changes could be found in the cells, and that these changes were followed by atrophic changes in the optic nerve, and, further, that "all parts of the ganglion cell layer were not equally attacked, but that certain areas were respected, and particularly the middle of the central region. This last accounts for the fact that central vision is recovered first in those blinded by quinine, and may be perfect while the periphery of the field remains permanently defective.

It is impossible to explain this from the condition of the circulation which would lead one to expect complete blindness, and in cases of embolism of the central artery of the retina we find that complete blindness does result from the stoppage of the blood supply, and is permanent. Again, Dr. Hamlisch reports the case of a boy of four years of age, who became blind after taking 38 grains of quinine, but whose retinal circulation was found to be quite normal. Dr. Gruening records a similar case, In Dr. Buller's case, too, absolute blindness had persisted for several days before any change could be seen in the retinal circulation. Garofolo's case was similar to Dr. Buller's. On the other hand, many cases have been reported where vision had been restored, while extreme retinal ischæmia persisted. Bruns has reported two such cases, in one of which the ischæmia was extreme ten years after the vision had been restored. From these facts we are forced to conclude with Dr. Druault that the primary lesion is in the ganglion cell layer, while the circulatory disturbance plays a subsidiary rôle in the causation of the blindness, by depriving the already damaged cell of its nutritive supply.

In fact, it has occurred to me that the extreme contraction of the retinal vessels may be a reflex, and serve to preserve the delicate nervous elements by cutting off the blood charged with quinine.

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DIAGNOSIS AND TREATMENT OF METRORRHAGIA.

BY

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Of all the organs of the economy the uterus is the one most exposed to hæmorrhages. Elsewhere a hæmorrhage will always be a pathological phenomenon; here it may be only an exaggeration of a physiological and periodic fact in harmony with the genital life of the woman, varying with every individual.

What is of most interest to us is the study of pathological metrorrhagia, and if not always easy to discern in clinical surgery when a hæmorrhage ceases to be a regular menstruous function and becomes a metrorrhagia, at any rate we will here set aside everything which concerns true physiological hæmorrhage of the uterus. In the same way we will neglect hæmorrhage in connexion with the gravid uterus, whether the pregnancy is normal or abnormal, uterine or tubal, and those which coincide with the expulsion of an ovum, either during the term or at the end of its development. This phase of the question rests entirely with obstetrics.

We will retain, on the contrary, the hæmorrhages due to a pathological modification of the uterus, directly resulting from an abortion or confinement. We shall also set aside these hæmorrhages resulting from general diseases in which there is a tendency to hæmorrhage, especially these affecting the circulatory system.

If we consider only surgical metrorrhagia, we must yet, from a clinical point of view, classify them.

The anatomical causes of bleeding from the uterine mucosa are without doubt of great interest, but their study cannot detain us. Any lesion of the mucous membrane, any alteration of the vessels, any state immediate cause of a hæmorrhage. It is not possible to found a immediate cause of an hæmorrhage. It is not possible to found a classification upon these lesions ,as any one of them may appear in the course of a disease capable of causing a metrorrhagia. However, a good many surgeons of the present day have a tendency to admit with Richelot, that a fibromatous uterus, and even, perhaps, a cancerous one, is only the last stage of an uninterrupted series, beginning with a medium-sized sclerotic uterus, which Virchow called parenchymatic metritis, followed by the giant uterus, in which fibromatous nodules expand, but we prefer to remain upon a purely clinical ground.

In presence of a patient who loses blood, examination of the generative organs will reveal whether or not there is some evident lesion. A

Read before the Montreal Medico-Chirurgical Society, 18th November, 1904.

big fibroma, a cancer, a polyp, protruding into the vagina are immediately discovered, and though there may be a difference as to the exact diagnosis, anyhow they constitute an evident lesion, which attracts all the interest and makes the metrorrhagia secondary, it having become a mere symptom.

Setting aside such cases, we will only retain those connected with a metrorrhagia, of which one cannot immediately discover the cause upon bimanual examination. We can divide them into two great classes—those appearing without any acute or chronic affection of the uterus and those which, on the contrary, are directly connected with an acute or chronic metritis, a miscarriage, or a confinement.

In the first class we find virginal metrorrhagia, metrorrhagia of the menopause, metrorrhagia connected with lesions of the adnexa, and metrorrhagia secondary to an angioma of the uterine mucosa.

In the case of a virgin we can without doubt observe an infectious metritis, caused by uncleanliness, masturbation, gonorrhœal vulvitis or vaginitis, but one also observes an essential metrorrhagia, which often appears when menstruation first takes place. This latter, at first laborious, becomes profuse, then too frequent, and the loss of blood may be continuous, with the exception of a few days. Such hæmorrhages lead to general disturbance and to anæmia, with its usual symptoms, but, properly speaking, there is no local trouble. There may be spontaneous improvement, but sometimes the continuous loss of blood may cause death, though this is exceptional. In such a case there is only circulatory trouble in connexion with a bad condition of the general health or a congenital weakness of the muscular tissue of the uterus and of its vessels (Doleris). The curability of these hæmorrhages by general treatment shows that such an opinion concerning the pathogenesis must often be correct.

Metrorrhagia of the menopause may be the result of an infectious state of the uterus, or, on the contrary, may appear from a few months to a year after the cessation of the menses, without there having been any inflammatory lesion of the uterus at the time of the last menstruation.

Here the pathogenesis is without doubt open to discussion, but one may, with Doleris and Boilly, ascribe it to the circulatory disturbance, resulting from suppression of the menses, as it sometimes happens after ovariotomy, otherwise it must be connected with senile alteration of the uterus, hyperplasia of the connective tissue, which precedes the atrophy of the mucous membrane, diminution of the contractility of the uterine muscle, or at last to sclerosis of the vessels. Sometimes in such a case one has to deal with one of these old sclerotic, hypertrophic uteri.

These hæmorrhages soon disappear of themselves, or if not, justify surgical treatment. We should remember how difficult is the diagnosis from epithelioma of the uterus, so frequent about the menopause, which at first discloses itself by anything but hæmorrhage. Often dilatation and digital exploration of the uterus or the microscopic examination of a fragment of the mucous membrane are necessary, but are not always sufficient to decide the diagnosis.

In lesions of the adnexa one can observe metrorrhagia or, better, menorrhagia, characterized by severe and constant pain during their whole course. It occurs in cysts and solid tumours of the ovary, but especially in oophero-salpingitis. It appears that one may refer them to some reflex neuro-muscular phenomenon, in some way to be compared to the menstrual flooding due to the rupture of the Graafian follicle, because curettage does not stop them when ablation of the diseased adnexa does.

Angiomatous metritis is an uncommon affection, which deserves to be called true hæmorrhagic metritis, for, anatomically, it is of vascular origin. Professor Pozzi was the first to distinguish it and give it a clinical description. Its anatomic characters have been described by Quenu and Pillet. The uterus is voluminous and thick walled, but of normal consistency. There is no hypertrophy of the mucous membrane, and the epithelium is normal, but the vessels are very numerous, dilated, and their walls show the embryonal character. Sometimes their dilatation is such as to give the appearance of cavernous tissue (Quenu).

There is really a vascular new formation, and consequently a kind of angioma of the mucous membrane, and the new formation can be detected even inside the uterine muscle (Pillet).

It is most probable that these alterations result from an old infection of the uterus, which finally located itself upon the vessels, because these patients have been treated, curetted, and any lesion of the mucous membrane alone has had an opportunity to disappear. From a clinical standpoint, this affection is characterized by the excessive duration of the hæmorrhage, and by this fact that curettage performed one or several times, and all other forms of treatment for the hæmorrhage has been a failure.

II. I shall next consider metrorrhagia in infectious lesions of the uterus or following expulsion of an ovum.

We have to study here metrorrhagia in acute and chronic metritis and decidual endometritis. We shall not delay with hæmorrhage in acute metritis, for, if common, it is not as a rule copious, and loses interest as compared with the other symptom of acute infection of the uterus. Whatever its origin, one notices more or less serious modifica-

tion of general health, and locally pain, with increase in volume of the uterus, and especially a copious purulent discharge. At the same time as the acute symptoms improve the metrorrhagia diminishes without any special treatment. In chronic metritis metrorrhagia does not always appear; far from it. There is none in the glandular or in the mixed forms, but it is directly related to the pure interstitial forms, the cause being the desquamation of the epithelium and exfoliation and bursting of the capillary vessels in the course of this later form of metritis.

Fungous metritis is only a different variety of the interstitial form. The hyperthrophy of mucous membrane which constitutes the fungous growth, and sometimes even proceeds to the formation of polypi, is followed by an intense development of vessels, and the losses of blood are at the same time persistent and abundant. These latter were formerly described as hæmorrhagic metritis, but we prefer to abandon this definition, since hæmorrhage is not the characteristic sign. It is only the most important one, but may be missing. There remains what is usually called decidual endometritis, which must not be confused, a mere acute metritis from infection following confinement or miscarriage. But here we have a fragment, often very small, of the placenta or membrane remaining in the uterus, which is sufficient to cause incessant hæmorrhage. Indeed, Kütsner and many others have shown that inflammation starting from some islet of membrane may spread over the whole mucosa. Hæmorrhages appear at different times after the miscarriage, generally a few days after, and once started never diagnosis is the ultimate connexion between the loss of blood and a diagnosis is the ultimate connection between the loss of blood and a miscarriage. We must remember also that islets of membrane may produce true tumours or deciduoma, which can be only detected by intrauterine exploration. When benign they remain localized and do not recur on removal. Malignant, they extend beyond the uterus, affect the general health, and tend to recur on removal. In both cases hæmorrhage is severe.

Treatment.

The therapeutic indications may be summarized as follows:—1st, hæmorrhages may be serious enough to cause a true condition of anæmia, and endanger the life of the woman. One therefore must have recourse to palliative treatment, destined to arrest, at least temporarily, the loss of blood, and to improve the general health. On the other hand, it is also necessary to treat by various measures, to be discussed, the disease which causes the hæmorrhage.

To start with, we will confine ourselves to the description of the usual

and classical methods of treatment to which of late years but few changes have been made. The patient is put in absolute rest in the dorsal position with the feet elevated. Vaginal or even interine injections of very hot water are administered. If this fail, one may pack the vagina with sterile gauze; the packing must be very tight, and be left in for 48 hours. If necessary, the bladder may be emptied by catheter. Vaginal packing has been sometimes replaced by temporary suture of the neck of the uterus. As packing is always painful, it may be replaced, according to Bouriaut of Geneva, by intrauterine injection of gelatine in two per cent. It is sufficient to inject ten to fifteen cc., and to repeat two to four if necessary. This method gives immediate results in hæmorrhage from uterine atony, and in that due to fibroma or fungous endometritis. I am not aware of the use of intrauterine applications of adrenaline, but judging from the value of this agent elsewhere ,it might well be here employed with benefit.

Subcutaneous or intravenous injection of normal saline solution in large quantity help to make good the loss of blood, and to prevent the consequences of the rapid anæmia. We simply mention *en passant* the use of the so-called hæmostatics as ergot, hydrastis, digitalis, as well as local injections of antipyrine, which are only of use in mild grades of hæmorrhage, and not of sufficient value in the more serious forms. Such palliative operations as ligature of the uterine or utero-ovarian arteries may also be dismissed, since, if the patient can stand surgical intervention, we prefer curettage or hysterectomy. We willingly acknowledge, however, that in some very special cases this ligature method has given very good results.

When there is no cause for haste, when the life of the patient is not endangered, one must direct his attention to the cause of the hæmorrhage.

Two methods are at hand—one, conservative, consists in modification of the mucous membrane by cauterization or electrical treatment, the other, more radical and essentially surgical, consists in removing the mucous membrane by curettage. Here again we will not speak of the treatment of fibroma or cancer with hæmorrhage, as this would take us beyond the limits of our paper, but only try to state the precise therapeutic indications, and the different methods employed.

Firstly, several of the metrorrhagiæ we have mentioned disappear under simple treatment or no treatment at all. Such are most of the hæmorrhages of puberty or of the menopause. Rest and injections are usually sufficient, with general tonic treatment, hydrotherapy dry friction and massage. Continuance of these hæmorrhages indicates the use of electricity, curettage, or in old women even hysterectomy.

In acute metritis, small hæmorrhages disappear as soon as the acute stage is past.

Finally, hæmorrhages due to lesions in the ovaries or tubes disappear upon removal of the adnexa, unless there is an accompanying affection of the uterine mucous membrane.

It is chiefly in cases of chronic metritis that the choice lies between cauterization and electrical treatment. The list of uterine caustics is a very long one, of which only the more important will be mentioned. Creosote and glycerine, camphor, naphtol, tincture of iodine, silver nitrate, chloride of zinc in pencils or in one-tenth solution.

All these agents are applied to the interior of the uterus with or without preliminary dilatation. They are all open to the objection that their action may be either too feeble or two severe, and above all that they diffuse over the surface of the mucosa, the consequence of a too severe cauterization being stenosis of the uterus. All these products act by destruction of the mucosa. Electricity, on the contrary, acts either by stimulating the uterine contractility, the uterine muscle being a true vaso-motor apparatus, or by actual caustic destruction. The different electrical currents have been used for the former purpose, but it seems that the galvanic current gives better results than the Faradic, and above all than the magnetic. Static electricity is not to be recommended, because it favours congestion of the pelvic organs. The positive electrode is placed upon or inside the cervix, the negative upon the abdomen or both inside the uterus. (Bipolar method of Apostoli.) For a caustic action the galvano-caustic method is used, in which a chemical action is combined with an electrical one.

One electrode, the positive, being always placed in the uterus and the other upon the abdomen or in the uterus also, the respective indications for these methods seem precise enough. In old chronic metritis with small hæmorrhages but abundant leucorrhœa when the uterus is enlarged, slightly painful, the cervix ulcerated, one can with advantage use caustics, iodine in preference to chloride of zinc, which is considered to be too dangerous, especially in pencils.

On the contrary, uterine atony, with frequent and profuse hæmorrhage, as are observed in the early stage of chronic metritis, will benefit by galvanization or faradization. Surgical methods are curettage and hysterectomy. Curettage has very specific indications in decidual and fungous metritis. It is without doubt the method of choice, always giving the best result. There is no reason here to employ conservative methods incapable of giving the same result.

Vaginal hysterectomy is suitable when curettage has failed, or will always fail, as in angiomatous metritis, deciduoma malignum, and we

can add in any metritis of old women with abundant hæmorrhages, where there is no reason for saving the organ.

In closing, we would call attention to the fact that Quenu, in a case of angiomatous metritis in a young woman, satisfied himself by opening the uterus and dissecting away the mucous membrane, and obtained a perfect result.

THE PLACING OF PERINEAL SUTURES IN POSITION BEFORE THE LACERATION TAKES PLACE.

BY

A. LAPTHORN SMITH, B.A., M.D., M.R.C.S., Eng.,

Professor of Gynæcology in the University of Vermont; Professor of Clinical Gynæcology in Bishop's University, Montreal; Gynæcologist to the Western General Hospital, Montreal.

This short paper might more properly be called a further note on the immediate repair of laceration of the perineum, with special reference to placing the sutures in position before the laceration takes place, for the writer contributed a paper on this subject, being one of a symposium for the 1904 meeting of the American Gynæcological Society at Boston, which was based on an experience of three cases. Since then I have had one other case, and the result was so satisfactory that I felt impelled to share my good fortune with the members of this Society, leaving with them, however, the right to accept or reject it as they think best. Great progress has been made in lowering the death rate in childbirth, but septic infection still remains the greatest danger to which the lying-in woman is exposed. Practitioners are making fewer examinations, and are taking more care to disinfect their hands, but as perfection in eliminating *sources* of infection is almost impossible to reach, we must give more attention to lessening the *avenues* of infection. Two of the most important of these are laceration of the cervix, which a great many are in favour of repairing at once, as I understand has been done by Dr. Reddy for several years at the Women's Hospital in Montreal; and lacerations of the perineum, which are repaired immediately by many accoucheurs, but owing to poor light, poor assistance and other difficulties are so defectively done that only the skin is brought together, while the wound in the mucous membrane and muscle is left open to absorb from the culture media dammed back by the repair of the skin. More than once in the writer's experience, and many times in that of his friends, he has had to tear open the already united skin in order to obtain drainage.

That tears of the cervix vagina and perineum do form the avenues

Read before the Montreal Medico-Chirurgical Society, 19th November, 1904.

for fatal absorption is evident from the condition of the lymphatics running up the side of the uterus, which receive lymph from these sources, and were found to be full of pus in the cases referred to. For the last fifteen years the writer has made a regular practice of putting in a stitch or two in every case in which even half an inch of the fourchet has been torn. The result has been that his patients have been almost entirely free from the slight rise of temperature on the second or third day, which it has been customary to attribute to the milk, but is probably due to a mild septic absorption through these slight lacerations. He is convinced that patients who have had these small lacerations of the perineum repaired have made better convalescences than those on whom it was not done. In the case of very considerable tears of the perineum, especially of those which extend through the sphincter into the bowel, the question of loss of function of the muscles, of the perineum and of the pelvic fascia is still more important. Every member of this Society knows that the separation of the levator ani and transversus perinei muscles disables a woman very considerably.

Even these few minutes of your time would not have been taken up in urging the importance of repairing all tears of the perineum had the writer not heard a member of this Society, with a large obstetric practice, maintain that it was better to leave lacerations of the perineum to heal themselves, and there may be others who share that opinion.

The writer admits that in some cases it is very difficult for the family doctor to repair these lacerations unaided; and that it would be better in such cases to send for an expert or for another practitioner. He should always have in his bag sterilized catgut and silkworm gut, some curved needles and a needle holder. The greatest difficulty consists in securing the divided ends of the levator ani muscles and pelvic fascia, which retract at once when torn, and without being brought together it is of little use to sew up the skin. To overcome this difficulty the writer has devised the following method:—

Just before the child's head comes down upon the perineum the patient is anæsthetized and brought across the bed with the feet held by a twisted sheet or leg holder. The perineum is sterilized with soap and brush and bichloride. Then with the large curved needle firmly held in the right hand, and the thumb of the left hand in the anus to guard the rectum and the left forefinger in the vagina, the needle is entered at the base of the lesser lip on the patient's left, and passed rapidly under the vagina and about two and a half inches above the fourchet, coming out at the corresponding point on the woman's right. A silkworm gut suture is threaded into it with the right hand

and the needle is withdrawn, followed by the stitch, the two ends of which are left hanging loosely with a hæmostat. A second one is passed in the same way an inch lower down, but taking in the muscles of the perineum, whether we think the tear is going to be a bad one or not. If the perineum is exceedingly rigid, and we expect that the tear may go through the sphincter, we can put in a third stitch, which would take in the sphincter and on each side of the middle line. Delivery can now go on naturally or artificially, but as soon as the placenta has been delivered the perineum is inspected under a good light and a stream of sterilized water, all clots being rubbed off with the finger, and the stitches are then tied from above downwards, when we will find that there is absolutely accurate coaptation of the separate parts.

The presence of the silk worm-gut stitches placed as stated, before the head comes through the perineum and hanging loosely attached by their ends to a hæmostat, does not interfere with the termination of labour in any way; not even if forceps are required. If by keeping the pains under control and the head well towards the symphysis there has happily been no laceration, no harm has been done by their having been introduced; you simply take off the forceps and draw them out. While if the perineum has been lacerated more or less, it is not only of great advantage to save time and trouble by having them already in, but still greater to have them exactly in the right place to bring the lacerated surface together just as they were before the delivery.

Be it remembered that the placing of the stitches and tying them takes much less time than I have taken to describe the proceedings, about two minutes for placing them and one minute for tying them.

Remember also that the writer is not advocating this for multiparæ at all, nor even for all primiparæ, but only for those in whom there is a reasonable expectation that there will be a tear. Some doctors have told me that they have never seen a tear of the perineum, and I believe them, but only because they do their obstetric work in a dark room under the bedclothes; and they properly belong to the dark ages. It surely is our duty to have a good light, and to inspect the perineum under a stream of water, before saying that there has been no laceration. After having repaired several hundred perineums secondarily by Emmett's, Tait's and other methods, and about fifty primarily by the old plan after the tear had happened, and four times by the new method, the writer can assure you that there is no comparison in the ease with which the last can be accomplished. And after a long, tedious and anxious labour it is such a comfort, one minute after the placenta has been delivered, to feel that one of the principal causes of puerperal septicæmia has been removed, and that our duty to that

woman who has trusted her life and future health to us has been fully performed.

Now, as to the objections which have been raised, none of them can be considered very serious. One critic quoted an old proverb: "We should never cross a bridge before we come to it." But there is another proverb: "An ounce of prevention is worth a pound of cure." Another critic said that it was adding more danger of infection introducing the needle two or three times. But is it? Every doctor sterilizes his hands, the perineum is sterilized with soap and brush and bichloride and the needle and threads are sterilized. The requisite anti-sepsis is, on the contrary, a great advantage, as otherwise the patient might not be so carefully cleansed. Another objection was that it would necessitate the administration of an anæsthetic; but this procedure is not advocated for multiparæ who have had their perineums lacerated years before, nor for women whose baby is born before the doctor can get to them, and consequently can do without an anæsthetic, but for primiparæ with a tight perineum who have been in labour for twenty-four hours, and are so exhausted that the pains no longer advance the head. In such cases most of us give an anæsthetic, apply the forceps and deliver the woman. It is while she is anæsthetized, and before applying the forceps, that we may take two minutes to apply this harmless procedure, which may save us many hours of trouble later on.

The last criticism was that once or twice in a life-time you will expect the perineum to tear, and yet it does not tear, and the stitches have been placed in position unnecessarily. This is the worst that can truly be said against it, and even then it only takes a second to pull them out and no harm done. But that has not happened to the writer; whenever he expected the perineum to tear it has torn, and a few times oftener, so that his only regret has been that this method was not known twenty years ago, when he had a large obstetric practice, as it would have saved him many laborious primary operations for the repair of the perineum. Only to-day, while writing this, a practitioner, who is recognized to have unusual ability, told him that he spent two hours and a half repairing a perineum immediately, which was torn by the slipping of the axis traction forceps.

The writer can vouch for the extreme ease and rapidity with which the tear can be closed by this method.

The writer feels safe in saying that every physician who has graduated during the last five years realizes the importance of the immediate closing of lacerations of the perineum in order to avoid infection. Some of them also realize the importance of bringing the separated fibre muscles and fascia together. But when it comes to

putting their knowledge into practice, the difficulties are sometimes very great. That these difficulties are real is evidenced by the paper of Dr. Henry C. Coe (gynæcologist to several large New York hospitals, and a well-known author), whose paper immediately followed the writer's at the Boston meeting of the American Gynæcological Society in May, who stated that the majority of primary operations failed to do any good, because the separated muscles and fascia had retracted, and were not included in the stitches. This could not happen if my simple procedure were employed.

ACUTE INTESTINAL OBSTRUCTION OCCURRING AFTER LABOUR CAUSED BY HÆMORRHAGIC CYST.

BY

T. P. SHAW, M.D.

Fortunately, intestinal obstruction is a rare complication of the puerperal state. Text-books on obstetrics do not mention it as a probable complication. Hall Davis reports a case of tubal pregnancy causing acute obstruction.

Cases of acute obstruction occurring after labour, due to various causes, are known; but we have failed to find any report of a case similar to the following:—Mrs. C., aged 23—Primipara:—Up to the time of becoming pregnant she had been healthy. During the earlier months of pregnancy she suffered to a very slight extent with the usual nausea and vomiting. About the seventh month, while on her way to Kingston, on board the boat, she was seized with a sharp pain in the abdomen, which subsided in about 24 hours without any treatment. Confinement commenced at 9 a.m. on the morning of the 15th September and terminated at noon, after a short, uneventful labour.

The puerperium proceeded normally until 10 p.m. on the fourth day. At that time, while patient was at stool, she was seized with a violent pain in the left side, at first midway between the lower border of the ribs and the left iliac crest; later it became located in the left iliac fossa. At the time of my first visit, which was about an hour after the onset of the pain, the patient was suffering intensely, and it took some time to relieve her with a quarter of a grain of morphia, administered hypodermically.

Upon examination it was found that there was great tenderness over the lower zone of the abdomen, more pronounced on the left side. A soft mass was felt in the median line about two inches below the level of the umbilicus, which at the time was thought to be the uterus. I might say here that the nurse told me that she had felt the uterus in the morning near the brim of the pelvis, and at the time of the opera-

tion her statement proved to be correct. It was very difficult to make a satisfactory examination by palpation on account of the pain and tenderness. At this time the pulse was 75 and the temperature 98.5°. The nurse was given instruction to repeat the morphine, if necessary, during the night. On the fifth day, at my morning visit, the nurse reported that she had had to repeat the morphine twice during the night, and the patient had vomited twice. Great pain was experienced on the slightest movement of the body. Abdomen was tympanitic; no flatus had been passed since the pain began the night before; pulse 90, temperature 101°. Instructions were given to pass a rectal tube and give an enema. At 4 p.m. of the same day the patient's condition was about the same. The enema given in the morning had been retained.

It became evident one had to deal with a case of acute intestinal obstruction, the cause of which, at the time, could not be determined. Dr. Springle saw the case with me about 10 p.m., and recommended the introduction of the rectal tube again in the hope that the obstruction was due to fæcal impaction. Next morning (6th day) the condition of things had not improved. The pulse had by this time reached 120 and the temperature 102°. Absolutely nothing had been passed by the rectum, and when the rectal tube was withdrawn it was covered with bloody mucus.

It was decided to open the abdomen, and the patient was removed to the hospital.

The patient was admitted to the hospital with all the symptoms of exhaustion, with a pulse rate of 130, temperature 102° and respirations 22. She was prepared for operation at once. Ether was used for anæsthesia.

A thorough examination of the abdomen was made, eliciting no further facts than those already mentioned. The tumour was in the median line; there was no dullness in the right flank, but dullness was present in the left. The tumour was exceedingly tense, elastic, and easy to be mistaken for the uterus immediately after parturition. Considering the history of the case, and that her present condition demanded immediate interference, an exploratory incision was made through the left rectus muscle of the abdomen.

On incision, a dark blue tumour presented, very tense and as large as an ordinary adult head. The uterus was found compressed, very pale, and forced into the right side of the pelvic cavity. The tumour itself was found to be a huge blood cyst, unilocular, and of the left ovary; it was twisted on an extremely œdematous pedicle, which was composed of huge varicose veins and pulsating arteries. The pedicle itself was rather thicker than one's wrist. The tumour was delivered

through the incision, the pedicle untwisted, and a chain of ligatures of the heaviest of silk was applied. On account of the œdematous condition of the pedicle, it was thought advisable to apply catgut ligatures to each of the large vessels to supplement those of silk.

A large rectal tube was then passed through the rectum, and internally manipulated so as to reach the splenic flexure of the colon, in order to establish the fact that the intestine here was obstructed. I might mention that the weight of the tumour, its position in the pelvis, had pressed upon and obstructed the rectum. After the tumour was removed, this was confirmed by the flattened condition of the bowel from the promontory of the sacrum to three inches below. Its condition at the same time was inflammatory, and here probably was the point from which the bleeding occurred during the attempt to pass the tube before operation.

During the operation the patient collapsed, and manipulations had to be suspended to resuscitate her. She revived, however, and the wound was closed in the usual manner. A high rectal tube was introduced into the rectum, and a large quantity of salt solution injected by Dr. England, who was present at the time. Saline injections were also used beneath both breasts, and the patient was removed to bed.

Although exceedingly weak for many days, the patient continued to improve, though a femoral thrombosis occurred in the left leg, which somewhat impeded her recovery. Subsequently she was able to nurse her baby, and has since made an uneventful recovery.

CASE OF EXTENSIVE GUNSHOT INJURY AND UNUSUAL METHOD OF CLOSING A LARGE GRANULATING SURFACE,

BY

ARTHUR KENDALL, M.D., Cloverdale, B.C.

Patient, a tall, healthy athletic man eighteen years of age, while out shooting one Sunday in August, 1904, was standing on a fence, and in some way dropped his gun, which was a single-barreled 10-bore loaded with No. 3 shot, with the result that it was discharged at a very short distance away. The shot struck his right thigh on its anterior and inner aspect two inches above the knee, and tore out a huge piece of skin, sub-cutaneous tissue and adductor muscles over an area fourteen inches long and about three and a half inches in width, the shot ending its course by lodging in the testicles, scrotum, penis and lower part of the abdomen. In spite of the fact that two inches of the femoral artery was left pulsating in the wound, in addition to a great loss of muscular tissue and hæmorrhage, the young man walked home almost half a mile.

I saw the patient two hours after the occurrence of the accident. There was then some evidence of shock and considerable pain. In view of the fact that I had no assistance, and was working in an exceedingly dirty room literally black with flies, I did nothing more than clean out the wound as well as possible, and inserted a few stitches to prevent gaping of the wounds. I then sent the patient to the Royal Columbian Hospital in New Westminster.

On the following day, with the assistance of Dr. Drew, I operated on the patient, who was then suffering great pain. His pulse was rapid and feeble, temp. 101. The wounds had assumed a greenish black hue, and emitted a foul odour. So extensive was the laceration and gangrene that I found it necessary to remove both testicles, four inches of the cords, and do a complete amputation of the scrotum. I removed all the stitches from the leg, cut away as much of the gangrenous material as possible, and applied wet boric acid compresses. Owing to the condition of the patient, I did not deem it wise to explore the track of the shot which entered the abdomen, hoping from the upward course that the shot had merely lodged in the muscles.

The patient reacted to stimulation well, and the recovery was surprisingly speedy. At the end of four weeks the wounds caused by the operation on testicles and scrotum were healed. The wound on the leg, now covered with healthy granulating tissue, extended from three inches above the knee to the inner part of Pouparts ligament, and being from two to three and a half inches in width. So great was the loss of tissue that we had been unable to draw the edges of the wound any closer together.

At the end of the four weeks, everything being favourable, I decided to skin-graft, but, acting on the suggestion of Dr. Drew, I decided to do a different operation, which, I must confess, was somewhat experimental in character. I started by making an incision in the healthy skin down to the muscles and completely around the wound, the lines being roughly triangular in shape, fifteen inches long and four and a half inches wide at the broadest part. I then dissected up in one piece the whole granulating surface with the underlying scar tissue to the healthy muscle and removed the whole *en masse*. The next step was to dissect back the healthy skin from the underlying structures for a distance of from two to three inches, thus allowing the opposing edges of skin to be drawn together with very little tension. After making six small incisions for drainage, I sewed the wound up, using fifty-one silk worm gut sutures. After introducing gauze wicks through counter incisions, I put on a dry dressing.

One week later Dr. Drew reported that he had removed all the

stitches, and the wound healed by first intention, with the exception of one place, where a couple of sutures sloughed out and left a small granulating surface.

Two weeks after the operation the patient resumed his work of driving a team in a lumber camp.

At the present time, two months after the operation, the patient walks without any limp, there is no tenderness anywhere over the site of the wound, the skin has united loosely with the underlying structures, and there is absolutely no evidence of cicatricial contraction.

THE PRIVILEGES OF MEDICINE,

BY

JOHN MCCRAE, M.B., L.R.C.P., Lond.

Montreal.

Gentlemen:—I am here to-day to represent, in a sense, our Faculty, although that dignity has not long since fallen to me, in bidding you welcome; those of you who are in the upper years, welcome back to your labours and your successes, and those of you who have entered for the first time, to the roofs that will be to you in time your Alma Mater. I need not say that you are welcome, for you are a most important part of our college—you are, so to speak, the *raison d'être* of us all.

Since you have made choice of your profession, there will be no want of those who will urge upon you your responsibilities. Every lecture and every text-book will direct you to things that you must know, whether you choose to or not, and every day of your college life will lay upon you its duties. I have thought it well to speak, though briefly, of that other side which lies before you—not so ready to your hand, perhaps, as they will be later, but still most tangible and most satisfying —the privileges of the craft.

To-day you are initiated into a Four-way Lodge—with a door to every point of the compass—to a brotherhood that is more truly a fraternity of the heart than any other profession; to-day the traditions of that lodge became yours, and the rolls of honour that hang in those halls are the names of your brothers-at-arms. It is something to have been one of them. No nationality have they, for they are of every race and creed—from Æsculapius down to the alphabetically-lowest of yourselves; they have been trained in diverse schools of thought and practice, and the earliest and the latest of them have not much, it may seem, in common but this—that they have united at all times in the battle against disease and death.

Opening Address delivered at the opening of the 52nd Session, Medical Faculty, University of Vermont.

Since I have adopted the simile of warfare, it may be remarked that the earlier recruits had put into their hands pikes and short swords, whereas you of to-day have to learn the use of most complicated, long-range rifles; and I may be pardoned if I carry the simile a step farther, and mention that we, with our long-range weapons, are not so well acquainted with the look of our enemies face to face as were our forefathers, who had to get close to them to kill. I mean that these days of theory are apt, at times, to take us too far away from our chief objective— the patient. I leave that! But one advantage of those times is the rapid interchange of ideas that daily occurs throughout the world. We are cursed with periodicals beyond number, but we are also blessed thereby; we are in daily contact with all the laboratories of the world, where world-moving discoveries are from time to time made, some over-seas, some at our doors, even in our midst, but all—all in the lodge. The wonderful advances that the last few months have seen in the discovery of the causative agents of many tropical diseases, results contributed to, in a high degree by the splendid labours of the army and navy surgeons who have been concerned in yellow fever investigation, backed by the generosity of the United States Government—results contributed to by many painstaking labourers among the plague-ridden Indies—by men who take their lives in their hands in the depths of Africa—all these advances are ours—ours in a very real and very proper sense. But all this is mere talk, if I do not bring to you what I want to make clear—viz., that each of us has a two-fold place—firstly, we are members of this or that college, this or that community; and, secondly, and most important, we are members of that greater republic of Medicine at large.

All of us on this continent are born to a good, keen enthusiasm in something—politics, creed, business, or something else. It is not hard for us to be enthusiastic over our college—it is harder for us to be liberal enough to others—and a well-educated physician or surgeon must have it thrust upon him, if he does not naturally absorb the fact, that his enthusiasm must stretch out beyond his own coasts. We are not in this matter the greatest sinners; but two wrongs never made a right. If your profession gives you enough time and money to travel, do so. Blessed is he who has wandered far enough afield to know that the practice of good and worthy medical craft is confined to no one land; it has seemed to me that the world taken together makes a fairly satisfactory total; each land has its hobby, its one or two departments in which it excels, and the added result of all is a fairly complete science. It has seemed to me that, in hospital equipments and technic and technical surgery, America has more to teach than she has to learn; London is replete with anatomy, and London students, what-

ever they do not know, appear to me to know their cases; Germany is an acknowledged leader in pathology and, in some ways, France in therapeutics. But the every-day ills are being treated, and well treated, in a thousand places from Moscow to San Francisco, and from Aberdeen to Valparaiso. If you will not take any one's word for it, go and see for yourself, and, having seen that there is no one Hub of the Medical Universe, in a spirit of broad admission of the virtues of others—and, if it may be, of recognition of our own weak points—let us sit down and be thankful. We will have proved our right to inscribe our names in the rolls of the greater republic.

It may seem to you that, speaking to students, I am inverting things —putting the cart before the horse—when I speak of those advantages that are to befall you when you have got through the pitfalls and mires that seem to encompass you during your college course; it may seem to you that your entry into the lodge must yet lead you over a high stone wall whose top is plentifully bestrewn with broken bottles, so that one may not rest half way to take breath. Four years or the fraction of four years that you have yet to spend is a long time to take out of a man's life, if it were really taken out; but it is not. Man is, by nature, built to look forward; just as we always see, physically, what lies before us, so, mentally, we are ever looking to the future; hopefully, too, of that good time that we think is coming, though perhaps our strongest reason for so thinking is that it has not yet come. And this is quite as it should be; we are all looking to some sort of "starting point" at which we get our innings—while you are an undergraduate you look to the time when you will begin practice; when you have been a little while in practice, you look to the time when your practice will be as large as you wish; when that time comes, we shall look, perhaps, to a time when it will be smaller, if more select, and we shall have more time for other things—and one day we wake up, and, lo! we are old. Happy you and I if we wake up while we are still young. One of my friends, who has a kind of epigrammatic mind, once said: "There is a time in a man's life when he is about thirty, in a woman's life while she is yet younger in years—when he suddenly sees the horizon all around him." Let me explain a little what he meant. In our youth we see our early years, and all the road that we have come by—it stretches back to our birth, and we see it all—but ahead there is no limit; we think precisely as if we were immortal. One day, in later years, for the first time we realize that the road that was infinite, before us, has an ending; we see not only the beginnings behind us, but the end before us, and in that instant we realize that this is life; to-day as much as any day that ever will be; some of us see it earlier and some later, but I suppose we all come to it, and the

sooner the better. Have you caught the drift of all this preamble? It is just this, that your college days are, in their way, days just as full of the good things of life as any days will be, when you are more famous; I am not speaking merely of the transitory pleasures that make college days what they are, but also of the higher pleasures—those of a mind that is broadening, and learning, and getting more than a superficial knowledge of things, be they only anatomy and materia medica and such others. It may sound like preaching that I, not much older than yourselves, should dare to stand here and speak in such a lofty strain; if you can forgive that, and will think of the matter, you will see that these things are true. There is not one of you, even the youngest and the least experienced in life, who has not got to the time of life when he sees that some of the things he does are, and others are not, "worth the candle," in vulgar phrase. Look over the past week in your own mind? Some things were worth the doing and some were not. It is good advice (I cannot live up to it very thoroughly, I promise you)—to try every day to get done some of those things that are worth while—it may be only full detail of study—and gradually you will realize that these days—in this month of November, 1904—are part of life, and that in them you have done some things that you are glad to look back upon.

If I have insisted upon the recognition of the duties as well as the privileges of to-day, I hope I have not given the impression that ideals for the future are to be despised; far to the contrary—they are to be cherished. And no man is the worse for happy forebodings, fore-thoughts of days of wealth or luxury. Remember, though, that the days have gone by when Naaman the Syrian came to Elisha to be healed of his leprosy, and brought with him ten talents of silver, six thousand pieces of gold, and ten changes of raiment; the Naaman of to-day brings only his leprosy, and we are constrained to say, like Karshish, the Arab physician, "Scalp disease confounds me crossing so with leprosy." He leaves us the problem and takes away the changes of raiment, if he has them. But castles in Spain cost little to build and are very commodious to dwell in. I think we get nothing but good out of our ideals, though very many of them turn out vastly different from what we thought. We picture to ourselves lives of honour and place and wealth and fame; and, with good luck, most of us save from the wreck, at least honour, if not much more; and by the time we realize that our more soaring ambitions are not to be fulfilled, we are habituated to do without them. It was a comfortable saying of the palmistry expert, who said to one of his clients, "You will be poor until you are 45—and after that you will be used to it." This, however, is pure pessimism; not only expecting but getting ready for the worst—

and it may be a great deal better than this. It is certain that the profession owes every one who works hard, and is articulate with his tongue and his pen, some degree of local fame; articulate not in order that one should blow ones own trumpet, but because the chances are that, in an ordinary practice of 20 years, many an extraordinary case comes; and to tell your brothers of it is not only your privilege but also your duty.

When you have finished your set labours of college days, you step out on a broader field, where at any turn you may be confronted by the severest problem in the world. This responsibility is in itself a privilege; henceforward no problem that presents itself to you is an old one—this particular equation is not in the book. In the simplest case of measles there are two unknown quantities, first the measles, second the patient. What, in the name of Æsculapius, is the known quantity of the equation? At most the known quantity is a little empiric knowledge of how measles generally run. I ask you from a mathematical standpoint, does that problem seem to you easy of solution, where you have three quantities, one partly known, two unknown? Is there not some ground for humility here? And if one begins with humility, there is Nature, eager at every hand to teach us things, so that the equation the next time we see it looks familiar! Men regard it as a privilege to work an untouched gold mine; the privilege is yours, if you can but see it in that light. The vein is inexhaustible; I never heard of any one who became so familiar with medicine that he dared hold it in contempt. Law is the work of men; creed (I did not say religion) is human in its texture; both are finite, finally knowable; as long as children are born in the world new variations of the problem of disease must arise. I can see no end to the problem, nor can I conceive of anyone becoming more than reasonably perfect in knowledge of it. Have I made it seem a hopeless task that we are all set upon? I hope not; it is not a task that we shall ever see the end of; it is not a fight that we can quite win. As Cyrano de Bergerac says, "It is useless, you say! I know it; but one does not fight only in the hope of winning; no, no! it is far finer to fight when there is no hope!" And so it finally becomes your privilege to lay down your weapons and die in that stricken field.

You will see that I am speaking in a strictly sentimental sense. I do so because it is the best sense. It may seem to you unpractical—not yielding a return in coin of the union—but it is in the highest sense practical. I am setting quite aside the monetary aspect of the profession, necessary as it is; whoever seeks our profession with only the monetary end in view does it a grievous wrong, and will, in all likelihood, have it paid back to him in disappointment. I have said

then that the very vastness of the science is a privilege; and to employ your life in such a way that every day expands your mind, adds to your knowledge, makes you a completer man than you were the day before, is infinitely a greater thing than even the increases of legitimate trade. Have you noticed that all these things I have spoken of are profits which a man can cast up only in his mental ledger? It is true. About the successful physician there is not a great flourish of trumpets. The world may give its rewards in success, wealth, fame, social position, but the judgment of your success or failure is not to rest with the world; you decide that when you elect medicine. Your own mind, your own conscience is going to be your surest critic, and the love and respect of the poor of his community may be all the wordly honour that is given to the very noblest of our profession.

Have I made it at all evident, then, how high are the ideals that pervade our Four-way Lodge? On every member is laid an obligation to do and to leave undone, which is crystallized in the ethical rules of the profession, and to every member who walks truly by these is given the dignity of full knighthood in as great a kingdom as was King Arthur's. As long as you sit at this Round Table there must be no compromise with any of the ephemeral races that left their heads under one name to-day and another to-morrow. I am so narrow in my views that I cannot see that we have anything in common with the various sects and "cults" of healing that are so numerous in these days, and one of the privileges of our profession is that we need not dip our hand into the dish without such as these. Leave them alone. If it be that one of these sects be right and we wrong, then in time it will prevail and assert its place, despite all our opposition; if it is not right and true, it will need no push from us to send it finally crashing around its rotten foundations.

Finally, in the practice of our profession, you will have constant opportunities of doing good, some of which will be repaid to you in money, some in gratitude, and some apparently in neither. This is my largest, my most important paragraph; and, whatever you may think, there is no mawkish sentimentality about it. I take it that, when a man closes his books finally, this is the only balance that seems much to him. His property may be the most important to his heirs, his worldly dignity may seem the greatest to those upon whom it falls, but he sees things with other eyes. One of the most suggestive pictures in the world to me was painted by the late George Frederick Watts. It shows the draped body of a dead man, from whose brow has fallen a laurel wreath, and by whose side lie a mandolin, a book, a gauntlet—all signs of recent bodily and mental vigour. From the darkness that half enwraps the figure stands out the inscription, and this is the

kernel of the whole thing: "What I spent I had; what I saved I lost; what I gave I have." It will be in your power every day to store up for yourself treasure that will come back to you in the consciousness of duty well done, of kind acts performed; things that, having given away freely, you yet possess.

Someone has well remarked that your poor patients have one claim upon you that your rich ones have not—their poverty. If you acknowledge their claims upon you, it will, I believe, be your privilege to reap harvests of gratitude; and there is no keener pleasure I know of than to do some kindness that cannot be repaid in any other way. I have refrained from putting this upon a so-called religious basis, though it is perhaps the very essence of religion; but it has often seemed to me that, when at the Judgment Day those surprised faces look up and say, "Lord, when saw we Thee anhungered and fed Thee? or thirsty and gave Thee drink? a stranger and took Thee in, or naked and clothed Thee?" and there meets them that warrant-Royal of all charity, "Inasmuch as ye did it unto one of the least of these," among those faces will be many a general practitioner, many a man unknown to the scroll of fame, but whose name, nevertheless, hangs on the wall of our lodge! Is membership in this lodge no privilege?

The annual burlesque supplement of the *Münchener medizinische Wochenschrift* is always a source of joy to the discerning, and this year's number is just as amusing as its predecessors have been. The ofttimes pedantic ponderousness of the Teutonic scientific communication lends itself admirably to caricature, and that there are not wanting in the Fatherland unregenerate spirits quick to put the thumb of derision to the nose of scorn is attested by the contents of this *Scherznummer*. A pompous dissertation on general anæsthesia elucidates the author's discovery that the active narcotizing principle of ethyl chloride resides in its refrigerating powers, and after numerous costly experiments it was found that champagne formed the most satisfactory vehicle for administration. By spraying the bottles with ethyl chloride the active principle of cold was imparted to the contents and it was found that complete anæsthesia could be pleasantly produced by taking the anæsthetic by the mouth, though the after-effects, consisting in a tendency to somnolence and cephalalgia, were somewhat disagreeable. An admirably executed *x*-ray picture, consisting of an absolutely uniform rectangle of printer's ink, serves as a text for an enthusiastic description of a new type of fracture of a metacarpal bone, and the fonetik orthografists receive recognition in an essay on "Kiuretaszh of the serviks," in which such writers as Hauard Kelli and Pastöhr are quoted.

The most important contribution in point of length is a novelette

setting forth the fall from grace and subsequent expiation of Eosinophila, a beautiful but wayward leucocyte, remarkable for the charming delicacy of her nuclear network and the grace of her pseudopodia, who falls in love with a bold, bad epithelial cell in the cornea and thus acquires dangerously socialistic tendencies. An excursion to the pyramids (in the cortical zone) serves only to inflame her rebellious spirit, but she finally dies a glorious death in a pitched battle against the cohorts of the gonococcus, and having been expelled from the urethra in a drop of pus, her dead body may be seen beautifully stained red and blue in a mausoleum of balsam on a microscopic slide. Quotations from Faust throw a medical sidelight on many passages usually considered innocent of any esoteric meaning, and a newly-discovered fragment of the Odyssey describes in faultless hexameters the reward of Dakryokrates, a worthy Attic opthalmologist. After he had cured the eye of Polyphemus, wounded by the sage Ulysses, Poseidon, in gratitude, commanded the west wind to bear his high-prowed ship to the land of the Ophthalmodonts, a paradise for oculists, where all the inhabitants have thirty-two eyes and only two teeth. In consequence they eat but little, and owing to the sharpness of their vision all but dentists acquire huge wealth. The king of the land had cataract in every eye, his lovely daughter was a sufferer from strabismus to an equal degree, and the subjects were correspondingly afflicted, so that the happy Dakryokrates had his work cut out for him.

Other original articles, society reports, book reviews, and advertisements in abundance hold the mirror up to medical nature, and in good-humored satire point out some of the foibles of our calling.—*Medical Record.*

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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Remittances, advertisements or business communications are to be addressed to the Montreal Medical Journal Co., Box 273; all others to the Managing Editor, 216 Peel Street, Montreal. All communications intended for insertion in this Journal are received with the understanding that they are contributed exclusively to this Journal. A limited number of reprints of articles will be furnished to authors at cost price, if a request to that effect accompany the manuscript.

VOL. XXXIV. JANUARY, 1905. No. 1.

THE PREVENTION OF TUBERCULOSIS.

The very full attendance at the annual meeting of the Montreal League for the Prevention of Tuberculosis on December 18th, testified to the continued interest that is being taken in this association and its work. While the heads of the different committees had nothing startling to offer, the reports submitted were distinctly indicative of steady advance in the work of, in the first place, familiarizing the community with the dangers of tuberculosis and the means of preventing its spread, and, in the second place, of taking steps to treat those already suffering from this disease. Regarding the latter, it cannot be said that the League has so far made any very active campaign. There has clearly been a doubt on the part of the leaders of the League as to what is the soundest course to pursue, and progress has, so far, been tentative.

To a very large extent we appreciate this cautious procedure. How is the most good to be done for sufferers from tuberculois in a large city community? To establish sanatoria is costly, and, when established, these sanatoria cannot pretend to accommodate one-tenth of the cases which should be within them. We do not in the least mean to suggest that sanatoria are not of the greatest benefit to those entering within them; we have abundant proof that the very opposite is the case. The question, though, is not whether sanatoria are useful, but, given a limited amount of money afforded by the charitable and by the city, how can this money be expended for the greatest good of the greatest number. There is growing, undoubtedly, the conviction that this greatest good is to be obtained by the education and home treatment of patients in the city itself, by means of well-conducted dispensaries. Such dispensaries—first established, we believe, by Calmette of Lille—have become widely spread in France; there are no less than twelve such in the different districts of Paris. Wihin the last few weeks, after considerable difficulty in obtaining proper quarters, such a dispensary has been established by the League in Montreal, at 691 Dorchester Street, and here patients can attend at eleven o'clock, Mondays, Wednesdays and Fridays. Cases will be examined, treated and advised, and, where essential, help in the form of good food, etc., will be afforded, so far as the funds of the League permit. It is earnestly hoped that the hospital staffs and the practitioners of the city will help on the work by advising suitable cases to present themselves at this dispensary. In this way an active beginning has been made and we cordially wish the work all success. This, however, does not preclude us from hoping that within a short time there will be, in addition, established near the city a well equipped sanatorium to which cases can be sent which, for one or other reason, cannot be given home treatment.

Not the least interesting feature of the meeting was the speech by Dr. Williams, of Sherbrooke, in which he pointed out that, following the example of the Montreal League, an association had been established for Sherbrooke and the district of St. Francis. This association has been most active; it has copied Montreal by giving addresses by medical men in or in connection with the various churches; it has given lectures in the schools and in this and other ways the Catholic priesthood have most cordially co-operated, it has received the most active help from the Civic Board of Health and has established a system of visiting all declared and doubtful cases. The Eastern Townships are to be congratulated upon the spirit and energy thrown into this work.

THE DISPOSAL OF THE DEAD.

The Crematorium, limited, as we understand it, is a company which purchased and took over the crematorium from the Mount Royal Cemetery Company, and it has issued a pamphlet with the design of making popular the method of disposing of the dead by burning. The practice of earth burial is one of some antiquity and is bound up with those sentiments of religion which prevail in the western world. A sentiment which is so deeply seated will not be much influenced by anything so poor as reason or common sense, especially if the reasons are so poor as some of those which are put forward in this pamphlet. One example will serve: "At a meeting in St. Louis, in 1866, to consider cremation, Dr. J. M. Keller said: 'We believe the horrid practice of earth burial does more to propagate the germs of disease and death and to spread desolation and pestilence, than all man's ingenuity and ignorance in every other custom and habit.'" What Dr. J. M. Keller said in St. Louis forty years ago may not be of universal validity to-day, Indeed we venture to deny that the statement has been true at any time. If this pamphlet be confined to the profession alone no great harm will be done, for we are accustomed to the grotesque absurdities which are contained in the publications of tradesmen who are touting for business. If it come into the hands of the public at large—and there is always that danger when a thing is committed to type—it will serve to retard rather than advance the practice of cremation. In the statutory declarations, of which there are five, no question is left unasked. Not every person who applies for the cremation of a body is a criminal, yet the regulations are framed as if that were the case. There is an undeniable charm in the splendid simplicity of the arrangements for disposing of the dead by burning behind Mount Royal. That is why we think it an error of judgment and of taste to obtrude even upon the profession the things associated with mortality which might better be left out of sight.

Last winter there was a short, sharp, and somewhat extensive epidemic of diarrhœa in Montreal. A few of the cases were then so severe as to have a fatal issue. During the last few weeks we hear from several sources that a like epidemic is again in our midst. Had this condition occurred in summer it would, perhaps, occasion little remark; occurring while we have severe winter weather, it is distinctly worthy of attention, and we would suggest that those encountering cases of the condition make careful notes regarding the mode of onset, the duration, any uncommon symptoms, the character of the stools, etc. Last year it was currently reported as being a condition of abdominal grippe,

and this year, so we are informed, some at least of the cases have begun as influenza and then passed on to the diarrhœic condition. But this would not seem to be always the case, and it may be pointed out that little is known regarding the nature of so-called "abdominal grippe." In one fatal case, occurring during the epidemic last winter and coming to autopsy in the Royal Victoria Hospital there was found, not an enteritsis, but an acute colitis, and from the organs in this case Dr. Klotz isolated a bacillus of the liquefaciens type which, inoculated into rabbits, produced a similar acute colitis. It may be debated whether this was truly an example of the epidemic disease or whether it was merely a sporadic case. We mention the fact to call attention to and to advise a fuller study of the condition.

The Alexandra Hospital for contagious diseases is again coming into prominence. After a period of inactivity extending over a year, the Committee has again appealed to the public with good result. At a meeting held early last month the subscriptions were increased to over sixty thousand dollars chiefly by the donation of twenty-five thousand dollars which was made by Mr. James Ross. The work of building will not be undertaken till next spring and it will be a fully a year after that before the hospital will be habitable. In the meantime every effort will be made to have the hospital opened free from debt. The members of the profession can do much to help in the good cause by calling attention continually to the great need which exists in Montreal for adequate protection against contagious diseases.

Dr. H. Wolferstan Thomas, another late Governors' Fellow in Pathology, has been sent out by the Liverpool School of Tropical Medicine as head of an expedition to the Amazon, to study Yellow Fever. Dr. J. L. Todd, another McGill graduate, has been for several months in the Congo State, under the same body, studying Sleeping Sickness and other tropical diseases. He is now at Lake Tanyanika. Dr. Thomas, during the last year at Liverpool, had been in charge of the inoculation experiments in connection with the extensive studies upon Trypanosomiasis which are being undertaken there.

For the first time in the history of the Medico-Chirurgical Society the resident staff of the Hotel Dieu have sought its membership. Drs. Hamelin, Lebel, Lachance, Cousineau, Desmarais, Meunier, Marcil and Moreau will receive a hearty welcome from their *confrères* in the other hospitals and from the older members of the profession as well. The proceedings of the Society have been enriched during the past two

years by contributions from the French-speaking members, and the clinical material from the Hotel Dieu would prove a source of new interest.

The sum of $6,500 has been secured for the Children's Memorial Hospital as the result of the bazaar which was held by the pupils of the Protestant schools, and a cheque for the amount was handed to the President Sir Melbourne Tait by Dean Evans, at a meeting which was held in the High School on December 10th. In addition to aiding the work of this charity, the bazaar was useful in encouraging in the young the habit of giving, a necessary habit in Montreal where so much charitable work is left to the initiative of the individual.

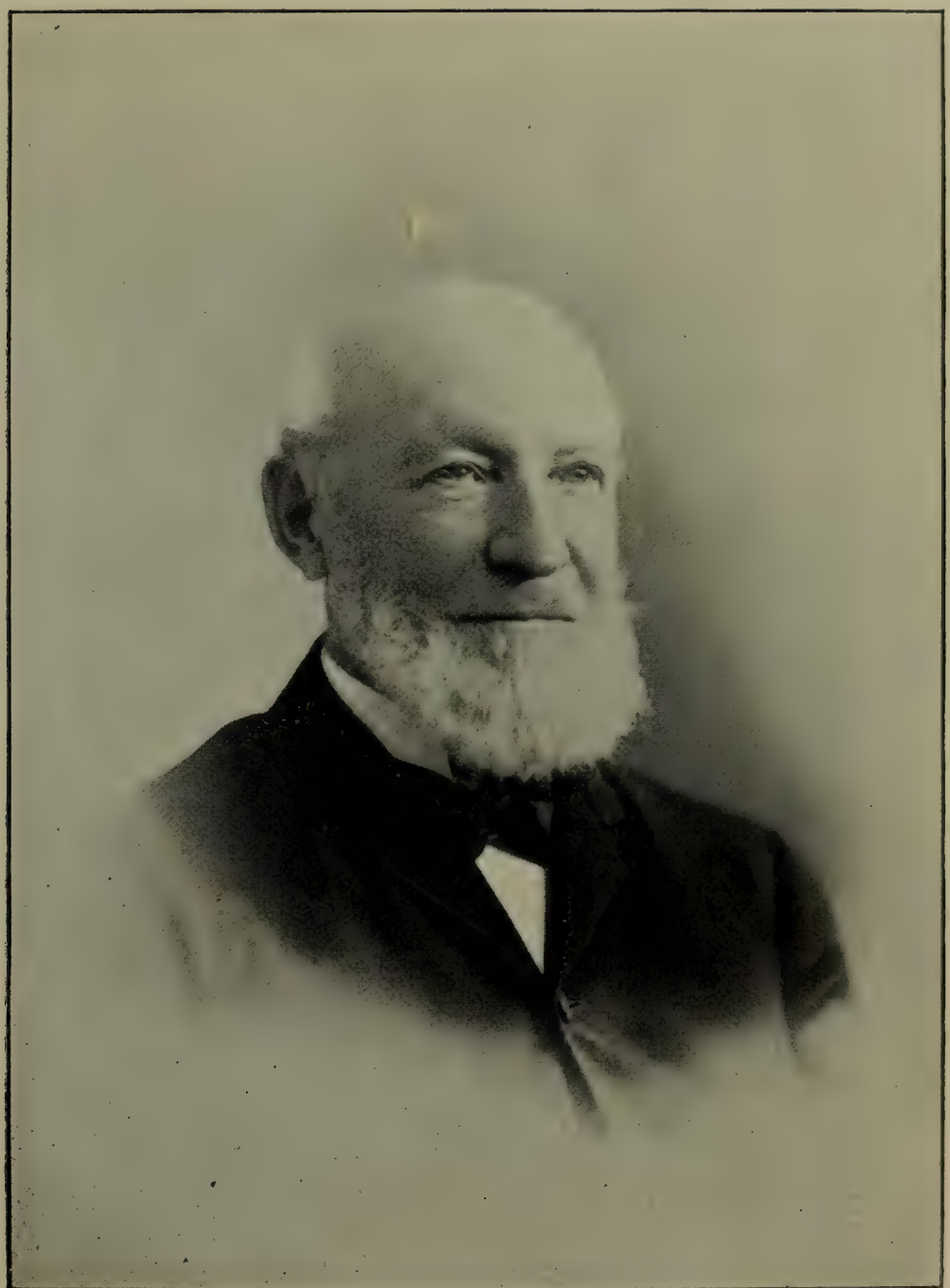
Dr. James Stewart has resumed his work after his long illness. His course was watched with anxious solicitude by his friends, that is by every member of the profession in Montreal, and by many elsewhere. His return of activity is a matter for congratulation to the profession, by whom he has been universally trusted, and to the public whom he has served so well.

Information has been received that Dr. Paul G. Woolley, late Governors' Fellow in Pathology of McGill University, who has been working in the Government Laboratories in the Philippines for the last two years, has been appointed Chief of the Serum Laboratory at Manila.

THE LATE DR. D. C. MACCALLUM.

In the December number of the MONTREAL MEDICAL JOURNAL, a somewhat hasty and cursory notice of the late Dr. MacCallum was given, with names and dates of the principal offices filled by the deceased gentleman during his long and busy career. To many of the Doctor's friends, however, and more particularly to those of his colleagues who had the pleasure of working with him, there seems to be room for a fuller notice of the man himself, as well as of the work he had done, not only as a practitioner, but as a teacher and a writer who, with tongue and pen, as in his beautiful and blameless life, had done his full share in maintaining the reputation and the good name of his college and his country.

Dr. MacCallum lived exactly four-score years and one day. There has been some confusion as to the date of his birth, but it is to the writer's knowledge, both from the Doctor's own statement and from official records, that he was born on November 12th, 1824. He had



THE LATE DUNCAN CAMPBELL MacCALLUM.

thus completed his 80th year on the 12th of last November, and his long and useful life ended peacefully on the following day.

Speaking first of his teaching or college career, he belonged to what might be called the middle or intermediate stage of the life of the Medical Faculty of McGill University. Beginning in 1854 as Demonstrator of Anatomy when the Faculty was twenty-five years old, he continued on through Medical Jurisprudence, Clinical Surgery and Clinical Medicine, ending with Midwifery and Diseases of Women and Children, and Director of the Montreal Maternity from 1886 to 1893, at which latter date he resigned his active connection with the Faculty and was appointed "Professor Emeritus," after he had been in harness twenty-nine years. The Faculty itself was then fifty-four years old.

During the same middle stage of the Faculty's life, he had for his fellow-workers such men as Campbell and Fenwick in surgery and clinical surgery; Bruneau and Scott in anatomy; Hall in midwifery; Howard and Ross in medicine and clinical medicine; Wright in materia medica; Craik and Girdwood in chemistry; Drake and Osler in physiology, with others that are still in the harness and therefore for the present must be nameless.

Among the names on the above list, that of Dr. MacCallum always had an honoured place, and deservedly so; for his work was always well and faithfully done, and with more than ordinary ability he always gave of the best that was in him.

In person, he was rather under than over the average size, with a frame well knit, perfectly proportioned, and endowed with strength and power of endurance to an uncommon degree. His features were regular, his complexion clear, and his expression indicative of his character; genial, modest, trustworthy and high-minded. In temper, tolerant, save when some "tale of injury called forth the indignant spirit of the north;" for the Northern Scottish blood of his kinsman "The MacCallum More" flowed freely in his veins, with all its compelling force.

As a teacher and lecturer, though somewhat slow of speech, he was nevertheless clear, methodical and forcible, the matter ever better than the manner, and hence his written lectures and addresses were more highly prized than those that were delivered extempore. Though all his spoken lectures and his demonstrations were excellent, it was more particularly as a writer of pure and perfect English that he came to be best known and appreciated. His little volume of Addresses, published in 1901, is a literary gem; and even apart from the excellence of its subject matter can scarcely fail, as it becomes better known, to take its place among Medical English Classics. It is free from all

verbosity and affectation of learning, and is full of evidences of rich thought, sound judgment, intellectual clearness and philosophic insight, expressed in language not unworthy of Addison, in its polished simplicity and purity of diction.

Apart from the Addresses and Lectures already alluded to, Dr. MacCallum was not a voluminous writer. He produced from time to time papers on Medical, Surgical and Obstetrical subjects in the local journals, some of which were copied into the British periodicals, notably the Journal of the London Obstetrical Society, and in all of them could readily be discerned his own admirable style.

Dr. MacCallum's merit as a writer was, no doubt, fostered by his experience as a co-editor of the *Montreal Medical Chronicle* with his friend Professor Wm. Wright. This journal was begun in 1853, and ended in 1859, and during its existence was recognized as a creditable representative of the medical journalism of that day.

Dr. MacCallum was an ideal practitioner, somewhat of the old school. Always faultlessly dressed, courteous in manner, sympathetic in feeling, and skilful in treatment, he was the idol of his patients, as well as their trusted friend.

Among his numerous *clientèle* were to be found many of the oldest French-Canadian families, and these were by no means the least appreciative of his patients. It was from one of these families that he had the good fortune to secure a wife, for Mrs. MacCallum was a daughter of the late Judge Guy of Montreal. Five children were the fruits of this happy marriage, four daughters and one son; and if it were permitted to us to speak of his domestic life, we should tell of a devoted husband and father, never so happy as in his family circle, surrounded by his wife and children. Three of his daughters are already married. One still lives with her mother, and the son promises to emulate the virtues and the successes of his father in the same noble profession.

Reviews and Notices of Books.

Diseases of the Nose, Throat and Ear, and their Accessory Cavities. By Seth Scott Bishop, M.D., D.C.L., LL.D. Third Edition. Illustrated with 94 Colored Lithographs and 230 Additional Illustrations. 564 Pages, Royal Octavo. Price, Extra Cloth, $4.00, net; Sheep or Half-russia, $5.00, net. F. A. Davis Company, Publishers, 1914-16 Cherry St., Philadelphia.

The necessity of issuing a third edition of the present work in so short a time, must be gratifying to the author. In its present form, a partial rearrangement of the matter has taken place, and with consider-

able advantage. A new chapter upon diseases of the pharynx has been added, which includes anomalies, and new growths; malformations, and deformities; stenosis; dilatation; papilloma; cystoma; fibroma; lipoma; angioma; sarcoma; carcinoma.

The chapters devoted to diseases of the nose and throat are for the greater part well written, and up to the views of the present day; but it is surprising that the subject of malignant diseases of the larynx should receive such scant consideration, especially as regards surgical treatment, and in the face of the excellent results obtained by various English and Continental surgeons. That portion of the work devoted to diseases of the ear has been very ably dealt with, with the exception of diseases of the labyrinth, where it is noted that suppuration of this organ, which has within the past two years received marked attention, is dismissed in a very few words. The book generally is one which is to be commended for the use of students, and the general practitioner. The illustrations are numerous, the majority of which are well executed, but as much cannot be said of the coloured plates.

ENLARGEMENT OF THE PROSTATE; ITS TREATMENT AND RADICAL CURE, by C. MANSELL MOULIN, M.D., Oxon., F.R.C.S., Senior Surgeon and Lecturer on Surgery at the London Hospital, Member of the Council of the Royal College of Surgeons; Examiner in Surgery in the University of Cambridge; late Radcliffe Travelling Fellow; Fellow of Pembroke College and Examiner in Surgery in the University of Oxford, and Hunterian Professor at the Royal College of Surgeons. Third Edition. Published by H. K. Lewis, 136 Gower Street, W. C., London, 1904.

This well written and excellent monograph is really an exhaustive and critical study of a very important subject. All questions relating to the prostate from its embryological development and minute anatomy to the ætiology of its enlargement and the latest methods of radical treatment have been considered by one who, from a vast experience, is able to speak with authority. The author maintains that enlargement of the prostate is capable of being cured in the great majority of cases, without undue risk, if the patient's bladder and kidneys have not suffered irreparable injury from the consequences that follow the habitual or careless use of the catheter.

The chapters on diagosis, methods of examination and general treatment are specially interesting. Much stress is laid upon the importance of prophylaxis as a means of deferring such complications as retention and cystitis, these, it is said, can generally be traced back directly to an attack of prostatic congestion due to indiscretion or carelessness. The dangers and consequences of routine catherization are repeatedly

emphasized; to pass a catheter for the first time either to relieve retention or to draw off residual urine in a case of enlarged prostate is properly considered an important surgical proceeding demanding the preparation of the patient and as far as possible an aseptic technique. Circulatory disturbances at the neck of the bladder and congestion of the prostatic plexus are held accountable for many of the symptoms present in cases of enlarged prostates. The great benefit which so many patients have received from catherization (Bottini) is largely explained by its effect in relieving this congestion. In suitable cases orchidectomy and vasectomy are advocated, and it is thought improve the circulation by influencing the nervous connexion which exists between the testes and the prostate. To obtain a satisfactory result in prostatectomy the obstructing part must be completely removed. The suprapubic methed (McGill) is the operation advised, with or without added perineal drainage, as the case may seem to demand. If the urine is septic and the patient in extremis the operation may with advantage be carried out in two stages; first, a preliminary suprapubic cystotomy, and second, enucleation of the obstructing gland after the patient's general and local condition has improved. The volume contains a wealth of clinical experience and will be an invaluable guide to both physicians and surgeons in their management of these troublesome cases.

LIGHT ENERGY; ITS PHYSICS, PHYSIOLOGICAL ACTION, AND THERAPEUTIC APPLICATIONS, by MARGARET A. CLEAVES, M.D., Professor of Light Energy in the New York School of Physical Therapeutics; late Instructor in Electro-Therapeutics in the New York Post Graduate Medical School. 811 pp., with 55 illustrations in the text and a coloured Frontispiece (spectra). Rebman Company, New York and London, September 15, 1904. First Edition.

One arises from a perusal of this work with the impression that the talented authoress, despite the very evident gleaning and careful scrutiny of almost all the available literature, and her own eleven years' work, has missed the intangible "something" which was needed to take her work out of the class of "compendia," and to place it in the front rank of text-books. The work is divided into twenty-one chapters, the first and second dealing with the physics of light energy and radiant heat, and the third to seventh with the action of light energy on the organisms, from the elementary to the human; perhaps chapter four had been better headed "The action of light energy on the vegetable kingdom," instead of "vegetable organisms," and thus avoided an obvious misunderstanding in nomenclature—the subsequent chapters deal with sun baths and solaria, electric light baths, concentrated light

(solar, arc and incandescent), blue light, red light, ultra-violet rays (concentrated non-visible chemical frequencies), and as a corrolary to the study of the invisible frequencies of the spectrum, four chapters are devoted to a study of vacuum tube discharges, the much discussed "N" rays of Blondlot, X, α and γ rays of radio-active substances (*i.e.*, radium, polonium, etc.) and the interesting phenomena of fluorescence and fluorescent stimulation. A chapter on the pernicious effects of solar radiations (insolation) and the pathological effects of electric light, fittingly closes a conscientiously compiled and thoroughly up-to-date treatise on this most fascinating and generally little understood subject; a book which may be regarded as completing, with "High Frequency Currents," by Chisholm Williams, and "Radio-Therapy," by Freünd, a trilogy on the physics and therapeutics of radiant energy. No physician who pretends to keep abreast of the rapid advances in therapeutics, of the last three or four years especially, can afford not to have those books on his shelf within easy reach. The book is well gotten up, but one regrets the high gloss of the finished paper, and the fine lines of the font of type used—both are hard on the eyes. *R. W.*

APPENDICITIS AND OTHER DISEASES ABOUT THE APPENDIX, by BAYARD HOLMES. B.S., M.D. D. Appleton & Company, New York, 1904, pp. 350.

This appears to be No. 2 of a series of Volumes on Surgical Emergencies. Appendicitis is a very much overwritten disease, and articles and monographs on this subject are becoming much less frequent on this continent. In Europe they have only recently appreciated the importance and frequency of this affection, and are rediscovering and reiterating all that has been said on this side of the Atlantic for the last ten or fifteen years.

This book is an interesting one, because it details the author's own experience and some extraordinary and many fatal cases. The subject is approached from the historical side first, and then obscure forms are noted. The symptomatogy is then given, and the course of the disease and its complications with the differential diagnosis. The latter list is a very long one, and the old-bogie impaction of the fæces in the cæcum is again trotted out, though the author gives no personal experience on the subject, evidently never having seen a case. He says impaction of fæces in the cæcum is a very common disease in old women, an assertion which needs more proof than the mere dictum of the clinician.

The operative treatment is described at length and in stages. Most of Dr. Holmes' cases operated on in the interval remained in bed only a few days, and were out of the hospital in less than a week.

Local anæsthesia is recommended in patients suffering from nephritis, chronic alcoholism, obesity, old age, etc.

There are additional chapters on peritonitis, intussusception, perforated typhoid ulcer and carcinoma of the intestinal tract.

The book is of much interest, but too long for one subject, and to get at the wheat one has to wade through a good deal of chaff. Although only in a paper cover, it is well illustrated, and has many very good coloured plates. Some of the illustrations, however, are difficult to make out, and their usefulness is very doubtful.

Examination of the Urine: A Manual for Students and Practitioners. By G. A. de Santos Saxe, M.D., Assistant Pathologist to the Columbus Hospital, New York. Philadelphia, New York, London. W. B. Saunders & Company, Canadian Agents, J. A. Carveth & Co., Toronto. Price $1.50.

This book appeals to one in many ways even before a proper appreciation of the contents is acquired. It is of convenient size—duodecimo, bound in flexible leather, and the print is large and distinct. While there is nothing original in the methods described, a very correct appreciation of the value of the various tests is shown, and the technique is clearly explained. The illustrations are mostly old and while many of them are excellent it would seem to the reviewer to have enhanced the value of the work if several of the old timers had been redrawn. The quantitave estimation of glucose by means of the polariscope is referred to, and a cut of the best known instrument inserted, but the reader is left to discover for himself how to use it. Perhaps the author's expressed belief, that it is so costly as to be beyond the range of the practitioner exonerates him from blame for the omission, but, if so, why waste a whole page with an illustration? A very lucid account is given of cryoscopy and we think a just estimation of its present value in diagnosis. "At most the method may be employed now as a corroborative test when other means of determining the functional value of the kidneys are also used for control purposes." Altogether the book is a good one, and compares favourably with most of the standard text-books, whose great drawback to the student is that they contain too much.

Practical Therapeutics. Hobart Amroy Hare. Lea Bros. & Co., 1904. Tenth Edition.

The opening chapter on General Therapeutical Considerations is written in a matter of fact style and the subjects are treated from a common-sense stand-point. It is practically free from dogmatic assertions, recognizing empiricism, only when the evidence is incontrover-

tible. From its general breadth of grasp the chapter will be valuable to the student, furnishing him as it does with a comprehensive view of the scope of the subject.

From the small amount of space devoted to the consideration of drugs it is evident that there is no padding in this part of the work; and although something has undoubtedly been sacrificed to brevity, this is largely neutralized by the discussion of the employment of drugs in the chapter which is headed Diseases. Were it not that the book is designed to fulfil an educational function, it is questionable whether the omission of quite a number of the drugs would at all impair its value.

The chapter on Remedial Measures other than Drugs is practical and well up to-date; and the data given in feeding the sick are useful.

The practice of recommending certain proprietary articles, to the exclusion of others which may be equally good, which obtains to some extent in the work is open to objection, and is liable to be severely criticized in certain quarters. As an example of the book-makers art the work is a decided success, print and cuts both being very clear. It forms a handsome volume which will be an addition to any library.

A Text-Book of Clinical Diagnosis, by Laboratory Methods, for the use of Students, Practitioners and Laboratory Workers. By L. Napoleon Boston, A.M., M.D., Associate in Medicine and Director of the Clinical Laboratories of the Medico-Chirurgical College, Philadelphia. Octavo volume of 547 pages, with 320 illustrations, many of them in colors. Philadelphia, New York, London. W. B. Saunders & Co., 1904. Cloth, $4.00 net. Sheep or Half Morocco, $5.00 net. Canadian Agents, J. A. Carveth & Co., Ltd., 434 Yonge St., Toronto.

Dr. Boston has succeeded in compiling a most useful work on Clinical Diagnosis, useful alike to the student and practitioner. Two features of the work especially commend themselves. (1) The directions are given minutely for each procedure, without taking too much knowledge for granted, on the part of the student. (2) The contents and modes of preparation of the various reagents used, are given in detail. Some of the author's own methods of performing a few of the commoner tests seem good, but perhaps when a student has mastered one way, he would do well to adhere to it, unless the newer has a decided advantage. The volume is well illustrated. The plates are good and give a correct and not exaggerated idea of the conditions represented. The work is thorough and deals with the newer as well as the older tests and should prove of great value to anyone interested in the clinical laboratory methods.

MEDICAL ELECTRICITY, a Handbook for Students and Practitioners, by H. LEWIS JONES, M.A., M.D. Fourth edition. London, H. K. Lewis, 136 Gower Street, 1904.

Medical electricity, by which is meant electricity employed for medical purposes, has assumed so much importance that a new book upon the subject is always welcome. The present book by Dr. Lewis Jones opens with a pleasant introduction in which not even John Wesley—who describes himself as a lover of mankind and of common sense—is forgotten. The volume contains a description of the various pieces of apparatus employed in the production and conveyance of electricity, and adequate mention is made of the forms of energy so recently discovered by Röntgen, Becquerel, Curie and Rutherford. The book is a physicians' book. Cases are freely cited, and the application of electricity for therapeutic purposes is fully dealt with. No practitioner of medicine can afford to remain in ignorance of the value of electricity and its allied forms of energy in the treatment of diseased conditions. This book of Dr. Lewis Jones will prove to be a safe guide.

HAND-BOOK OF THE ANATOMY AND DISEASES OF THE EYE AND EAR. By D. B. ST. JOHN ROOSA, M.D., LL.D., Professor of Diseases of the Eye and Ear in the New York Post-graduate Medical School, and A. EDWARD DAVIS, A.M., M.D., Professor of Diseases of the Eye in the New York Post-graduate Medical School. 300 Pages, Square, 12 mo., $1.00, net. F. A. Davis Company, 1914-16 Cherry Street, Philadelphia, Pa.

This little volume contains in the briefest possible form, the outlines of anatomy and methods of examination, operations on, and diseases of both eye and ear, and is a work of art in the matter of condensation; indeed one might search in vain among the many handy volumes in the special literature of the present day, for one containing so much in so small a compass. Nevertheless, the work is one which may safely be recommended to any student of medicine, working for a pass examination. It is full enough for this purpose, and is written in an easy genial style that will commend itself to any reader as a guide in practice.

SAUNDERS' MEDICAL HAND-ATLASES: General Pathologic History, by Hermann Dürck, Munich, edited by LUDVIG HEKTOEN, M.D., with 176 coloured illustrations on 80 plates and 36 figures in black and colours. Price, $5. Canadian agents, J. A. Carveth & Co., Toronto.

The merit of this series is in the concise text and striking illustration. The books are a reproduction in English of the Lehmann Medicinische Handatlanten and contain the original plates. The plates are done by

Reichold, of Munich, with wonderful care and skill. The present volume deals with general pathological histology and is entirely worthy of its place in the series. It is a work of art.

SAUNDERS' QUESTION COMPENDS: Essentials of Nervous Diseases and Insanity, by JOHN C. SHAW, M.D. Fourth edition revised by Smith Ely Jelliffe, M.D.

It is not essential for a student to know much about Nervous Diseases, but what is essential is contained in this little book of two hundred pages for a dollar. Dr. Jelliffe is editor of the *Medical News*, and has done his work with a practised hand.

A TEXT-BOOK OF HISTOLOGY, by FREDERICK R. BAILEY, A.M., M.D. Columbia University. William Wood and Company, New York.

The illustrations are of rare beauty. They are at once accurate and pictorial. Many of them are from fresh drawings. The publishers have produced them worthily upon suitable paper in suitable binding. The various processes employed in histology are adequately described. The book is a safe guide and a good companion.

Medical News.

MONTREAL LEAGUE FOR THE PREVENTION OF TUBERCULOSIS: ANNUAL REPORT.

The work of the League for the Prevention of Tuberculosis spreads now over a period of eighteen months, and in presenting this report, we do so hoping that it may increase your interest in the subject, and draw your attention to the efforts of the League.

An office was first opened at 11 Bleury Street, but on July 1st, 1904, it was moved to the present location, 691 Dorchester Street. On June 1st, 1903, the first reports of cases of consumption were received, and since that time these have been coming in more or less regularly, although the number reported has been in no way proportionate to the cases of consumption existing in the city. The object of having these cases reported was that education and instruction might be given to those suffering that they might by proper care take the most sanitary means of benefiting themselves and of preventing any danger to those with whom they came in contact. In pursuance of this work the patients have received verbal instructions relative to the proper care of themselves, have been given sanitary cuspidors to aid them in following the instructions, and also interesting and instructive literature, that they might become somewhat acquainted with the subject of tuberculosis and of the movement that is being made to overcome it.

In nearly all cases these have all been gratefully received, and the manner in which the great majority have endeavoured to follow the instructions has been most encouraging, and cannot fail to produce good results. The benefits, however, will only be manifest after years of work.

Whenever patients have required assistance we have endeavoured both to interest others in their behalf, and also to supply what our limited means afforded. In a great many cases this has been necessary, as the long illness of many a bread-winner has reduced the family to destitution. Poverty doubly increases consumption, for when proper sustenance becomes curtailed, the resistance to infection becomes weaker; so among the poorer families, tuberculosis, in one member endangers the others by direct contact, and by lessening the resistance to disease on account of forced privation.

The greatest difficulty encountered in the work is from the absence of places of refuge for the sick. There being no free sanatorium available for the early and hopeful cases, these are forced to remain in their homes, thus losing very often their only chance of recovery, and becoming at the same time another dangerous source of spreading the disease. Since they have no place to go to, it has been our endeavour to help them in their homes, and to do as much as possible to prevent them from becoming a danger to others. The same lack of accommodation is found for those so far advanced as to be incurable, and our heaviest item of expense has been to find homes for these.

In carrying on the work of supervision of the cases, the chief aim is to stamp out the disease, and the handling of the cases has been with the idea of obtaining the greatest benefit to the community at large, to the families of those afflicted, and to the patients themselves. When the patients belong to other countries or cities, or when they are separated from their relatives, an effort is made to transport them to their homes.

The advanced cases, when destitute and neglected, are sent to the Home for Incurables. When the cases are incipint and curable, an effort is made to send them to some country place for recovery, but lack of finances has sadly crippled us in this most important phase of the work.

Our inspector, for whose services we are indebted to the city, devotes his time principally to visiting the cases at their homes, and to disinfecting. The visits are for the purpose of supplying cuspidors and literature, giving verbal instruction, and collecting any information that may be necessary. We thus keep in touch with the cases. The disinfection of houses is done not only when cases that have been reported to us have died or been removed, but the record of deaths from

tuberculosis is obtained from the Health Department of the city, and as far as possible these houses are also disinfected.

A striking fact investigated from the statistics of death obtained from the city shows the pressing need of precaution on the part of the sick, and of a strict disinfection of affected houses. During 1903 there were 248 deaths of children under five years of age from meningitis in Montreal. Fully 90 per cent. of these were tubercular in origin. Inquiry at their homes almost always reveals the fact that an adult suffering from consumption has been living in the house. In many cases the death in the adult occurred before the birth of the child who was so early stricken with disease. If the proper precautions were taken, so that the germs of disease would be destroyed, the great infant mortality would be greatly lessened.

Bronchitis.

During the eighteen months there have been 300 cases reported. These were divided as follows:—males, 151; females, 149.

Age.—The youngest patient was five years, and the oldest seventy. Of 284 patients whose ages were given, 176 were between the ages of sixteen and thirty-five years, thus leaving only 108 scattered over the other five decades of life. The age of the average patient was thirty years and a half. Of the 300 cases, we have already received word of the death of 136. Some patients have been sent away, and all traces of others have been lost, so that the actual number of deaths would be much greater than this.

On investigating the details of 500 cases of deaths from consumption in Montreal, we found that the average duration of sickness was given as nine months.. From statistics of 80 deaths of our own reported cases, the average duration of illness was over fifteen months. The longer period of life of the League patients was probably due in a great part to the character of the patients themselves, as well as to the care they were taught to exercise. There are two causes for this rapid fatal ending: First, because the disease is insidious, and patients do not seek medical advice until the last stages are reached, and, second, because of the destructive force of the disease among the needy.

Of the 136 deaths, 85 were between the ages of sixteen and thirty-six, the average age being 31.5 years, and this bears out the results shown by the city statistics of deaths, for during 1903 there were 642 deaths from consumption in Montreal, and the average age of these was just thirty years.

During the eighteen months, 20 cases have been transported to their native places; 43 have been sent to the Home for Incurables, and a number have been sent to the country for various periods. Twenty

have been reported cured, or so greatly improved as to need no further attention.

Part of this work has been done at the expense of the League and part through outside resources. In all, fifty patients have received financial assistance direct from the League, including coal, food, railway fare, board, rent, etc., and others have received assistance in kind. We have now about a hundred patients on our active list.

The inspector has made 1,667 visits to the different cases; he has distributed about 9,000 cuspidors, and a large quantity of pamphlets; he has disinfected 500 houses (this since February 15th), and distributed 3,000 wall-cards among 326 public and private institutions and factories, where they are conspicuously posted for the instruction of inmates.

ARMSTRONG vs. BRUCE.

This was an action brought by Charles Armstrong, of Brampton, against Dr. H. A. Bruce, for burns received from a hot water bag during an operation. The case was tried before Mr. Justice Meredith.

The facts of the case, as reported in the *Canada Lancet*, are briefly as follows:—Dr. Bruce was called to Brampton by Dr. Lawson, on November 23, 1903, to see Mr. Armstrong who was suffering from acute Intestinal Obstruction.

A room in Armstrong's house had been prepared that morning for the operation by a trained nurse, a graduate from Galt Hospital, engaged by Dr. Lawson, acting for Armstrong. Dr. Bruce took with him a Kelly pad, which can be filled with hot water instead of air and said to the nurse "this is an improvement on the old Kelly pad, as it can be filled with hot water as well as with air and serves to keep the patient warm during the operation, obviating the necessity for hot water bottles. Fill it just as you would an ordinary hot water bottle." The nurse took it and had it filled with boiling water and placed it under the patient. While this was going on, Dr. Bruce was washing and disinfecting his hands and placing his instruments, sutures, etc. The operation was proceeded with and the obstruction was found due to a knuckle of bowel being strangulated in the internal abdominal ring and adherent there. This was separated with some difficulty and withdrawn, when a small portion of bowel—about the size of a five-cent piece—was found to be gangrenous. This was turned in and sewn over with Lembert sutures, so that it might be thrown off into the gut.

The patient made a good recovery from the operation, but the next day he was found to have received superficial burns across the back and thighs. These were painful but not severe and were healed at the end of seven weeks when he was able to be up and about the house. Altogether he was confined to the house about ten weeks.

When Dr. Bruce's account was sent later, Armstrong declined to pay it, stating that he had been burned and put to extra expense with nursing, and therefore requesting that the account be reduced. Dr. Bruce replied that he was not in any way responsible for the burns and therefore could not on their account reduce the bill. As no payment was made at the end of six months, after several requests, Dr. Bruce sued him for $100, amount of his account, and a week later Armstrong sued Dr. Bruce for $5.000 on the ground that the operation was unnecessary, and that the burning resulted from carelessness of the defendant.

The following is the text of the judgment: The plaintiff sustained a very painful injury and one which has caused him some loss. These facts do not necessarily entitle him to relief.

In order to have damages in this action he must satisfy the Court that the defendant has been guilty of some actionable negligence. The defendant is a skilled gentleman, a gentleman of the medical profession, and what would in an ordinary individual be but mere negligence would in his case, no doubt, be gross negligence. Had he done that which the nurse testifies he did, it would in my judgment, have been gross negligence. Whether I would be obliged to say that the injury which the plaintiff sustained was the natural effect of that negligence is another question and one which I need not determine. What I have now to find is whether the plaintiff has affirmatively shown that there was negligence on the part of the defendant occasioning the injury of which he complains.

I am unable to find upon the evidence that the nurse's statement is accurate. She is, I think, quite mistaken as to the direction proceeding from the defendant in regard to the filling of the pad. I am satisfied that she has confused that which he said in regard to sterilizing his instruments, with that which he said in regard to filling the pad. I have no manner of doubt that if the doctor had said to any experienced nurse that she was to fill that pad with boiling water it would at once have struck her as an extraordinary thing, and one calling for some explanation. Nothing of that sort took place. It was a thing that could not have been done by Dr. Bruce, unless through a slip of the tongue. He never meant that she should do that which she did. So that the probabilities are altogether against the story of the nurse. And the direct testimony very greatly preponderates in favor of the defendant. We have Dr. Bruce's own statement, which is worthy of at least as much credence as that of the nurse. No doubt every one is naturally prejudiced in his own favor in a case of this kind, and Dr. Bruce's action in saving himself against a charge of negligence is to be to some extent affected by his interest. On the other hand, the

nurse is saving herself from a charge of negligence, and probably an action for the recovery of damages. They stand upon an equal footing as far as that is concerned. Then there is the testimony of the other two medical gentleman, who say that the nurse is mistaken. Upon the whole I find that the direction to fill the pad with boiling water was not given but the direction was given to fill it as if it were a hot water bottle, and if that be so, the plaintiff's case seems to me to fall to the ground. I cannot find any negligence in Dr. Bruce having under the circumstances assumed that the nurse would perform her duties properly. I cannot think that upon this branch of the case anything like a case is made out for the plaintiff. It is not contended that liability arose by reason of any relationship of master and servant having existed between the defendant and the nurse.

Dr. Bruce's claim was allowed and Armstrong's case was dismissed.

CORPORATION OF McGILL UNIVERSITY.

At a meeting of the Corporation of McGill University held on the 14th December, the honorary degree of Doctor of Laws was granted to His Excellency Earl Grey, Governor-General of Canada, to be conferred at a special convocation at the earliest convenience of His Excellency.

It was decided that in future diplomas issued by McGill should be signed only by the chancellor or chairman of the board of governors, the principal or vice-principal, the dean of the faculty in which the student graduates, and the registrar of the university.

Hitherto diplomas were signed by the principal, vice-principal, dean of the faculty and all the professors in the faculty from which the student graduated. The reasons put forward for the change are as follows:—In some of the faculties the present diploma is now too small to admit of all the members signing in the space provided.

It is almost impossible to have all the signatures required owing to the absence of professors at the time of signing.

The difficulty of obtaining the required signatures is more pronounced in the case of students who graduate at other than the regular time, such for instance as double-course students in the faculties of arts and medicine. The difficulty is also seen in getting so many diplomas signed by such a large number in the short time that elapses between the meeting of corporation at which the degrees are granted and the date of convocation.

The present conditions are different from those which existed some years ago, in consequence of the increase in the number of graduates and also in the size of the faculties.

The present diploma is inartistic, too large to be conveniently framed, handled or transmitted by mail, and generally unsuitable.

NOTRE DAME HOSPITAL.

The annual meeting of the Notre Dame Hospital was held on the 14th December, 1904. The number of patients admitted to the hospital during the year ending June 30, 1904, was 2,226, of whom 1,313 were men and 913 women; 2,109 were Roman Catholics and 117 Protestants; 1,851 Canadians and 375 from foreign nations. Of these, 2,226 patients, 1,919 were discharged cured or improved, 166 left the hospital unimproved or recognized incurables, and 156 died at the hospital. The average stay of each patient in the hospital was 18 days.

In the outdoor services, 20,458 consultations were given; in the pharmacy, 26,000 prescriptions were filled up. The ambulances were called 1,437 times.

Each patient costs the hospital $1.09 a day. The total expense reached $43,824.63; the total receipts $41,742.05, leaving a deficit of $2,100.58.

The contagious diseases section of the new hospital is well underway and will be ready for occupation in the spring. The main new hospital will face Lafontaine Park and work is already begun for the erection of the power house. The ground has been bought by Mr. Rodolphe Forget at the price of $31,000 and given to the hospital. Mr. Forget is the president of the subscription committee, and a board of patronage has recently been organized, under the presidency of Mgr. Bruchesi.

The new hospital will have 200 beds, and will be modern in every respect. The plans have been prepared by Marchand and Haskell, of Montreal and New York, and the building fund is to be started im-

THE WESTERN (GENERAL) HOSPITAL.

Report for month ending 30th November, 1904:—Outdoor department: There were 543 consultations during the month, 232 medical, 63 surgical, 77 gynæcological, 53 eye and ear, 58 nose and throat, 22 skin, 38 genito-urinary. Indoor department. There were 44 patients admitted during the month, and 40 discharged.; 7 medical, 29 surgical, 8 gynæcological, 3 died.

ROYAL VICTORIA HOSPITAL.

Monthly report for November: — Patients admitted during month, 245; discharged, 229; died, 11; medical, 82; surgical, 104; ophthalmological, 20; gynæcological, 24; laryngological, 15. Outdoor: medical, 764; surgical, 407; ophthalmological, 467; gynæcological, 76; laryngological, 374; total, 2,088. Ambulance calls, 63.

MONTREAL GENERAL HOSPITAL.

In the Montreal General Hospital during the month of November

255 patients were admitted. 232 were discharged and deaths numbered 14. The ambulance responded to 147 calls. In the out-door there were 3,343 consultations.

The following correspondence appears in the *Canadian Journal of Medicine and Surgery*:—

Havergal College, 354 Jarvis Street.
Toronto, October 24th, 1904.

Dr. MacCallum, 13 Bloor Street W., Toronto.

Dear Sir:—Mr. —— has asked that his daughter, ——, may be under your treatment twice a week for some time. We can, I think, arrange this, subject to the usual condition that a discount of ten per cent. is deducted by the College off fees charged to the pupils.

Faithfully yours,
EDITH A. NAINBY.

Toronto, October 31st, 1904.

Dear Madame:—I have delayed answering your note *re* Miss ——, and what you term the usual condition.

I have never attended patients under any such condition. Will you be so good as to give me the names of some professional men who have attended the pupils of Havergal Hall under this condition, so that I may talk the matter over with them.

Yours truly,
JAMES MACCALLUM.

Miss Edith A. Nainby,
Havergal Hall, Jarvis Street, City.

Havergal College, 350 Jarvis Street.
Toronto, November 1st. 1904.

Dr. MacCallum, 13 Bloor Street W., Toronto.

Dear Sir:—Your letter of the 31st ult. has been entered at the office. As Miss —— is the only pupil who will attend you from the College, your name will not be entered on the Staff of Specialists in connection with the College, and, therefore, the question of discount does not apply to your case.

Faithfully yours,
S. S. HENDERSON,
Bursar.

Toronto, November 4th, 1904.

S. S. Henderson, Esq., Bursar of Havergal Hall.

Dear Sir:—Your note of November 1st received. Let me point out that it is a question not of discount to the pupil, but of commission demanded by Havergal College from physicians because the patient happens to be a pupil in that school.

No other school in Toronto—and I have had patients from them all—has made such a proposal. Of course, you inform the parents of your pupils that in case of illness the pupil will be sent to Dr. A—, because he gives Havergal College a commission, and that you do not recommend Dr. B—, because he does not give a commission.

No reputable physician will so far forget himself as to receive or give a commission, or employ runners or touts, even in the guise of the authorities of Havergal College.

I would have preferred to talk the matter over quietly with the physicians who have given commissions to the College, but your failure to give me their names forces me to make this matter public, and it now becomes my unpleasant duty to bring to the attention of the profession and of the College of Physicians and Surgeons of Ontario the fact that such unprofessional and reprehensible practices exist in connection with Havergal College and its staff of specialists.

Truly yours,

JAMES MACCALLUM.

The Shefford County Medical Association held a meeting at Granby on the 20th November with Dr. Cowley, President, in the chair. Dr. Cowley delivered an address in the course of which he urged on the young practitioners the necessity on their part of hard work, close observation and unceasing perseverance if they wished to become useful members of the profession. He also dwelt upon the importance of the members, individually as well as an association, taking a hand in the fight against consumption, and mentioned the marked prevalence of the disease in the County of Shefford. The association passed a strong resolution in favour of the government establishing in Canada an institute for the manufacture of antitoxin serum, so as to reduce the cost of these important remedies. The association further expressed its opinion that parliament should enact legislation to insure the publication on the label of each bottle of patent medicine the name and exact quantity of each ingredient it contains.

At the meeting of the Board of Governors on December 3rd, the contracts were let for the erection of an addition to the Toronto Western Hospital, 35 feet by 50 feet, and three storeys in height. This addition will give accommodation for thirty-six patients and will be ready in about three months.

A medical association has been formed at Port Arthur under the title of The Thunder Bay Medical Association. The following are the officers: — President, Dr. G. W. Brown; Vice-President, Dr. W. W. Birdsall; Secretary, Dr. H. E. Paul; Treasurer, Dr. J. M. McGrady.

The new general hospital at Smiths Falls is just completed and is now open to receive patients.

Dr. Henry Pigeon, of Peterboro, died suddenly on December 7th, in the 65th year of his age.

Dr. Thomas H. Cooper, of Melbourne, died from tubercudosis on November 1st, 1904, at the age of 44 years.

Dr. William MacGillivray, Toronto University, 1900, died in Pipestone, Minn., on the 28th of November, 1904. The cause of death was blood poisoning.

Retrospect of Current Literature.

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

CHARLES H. MAYO, A.M., M.D. "Thyroidectomy for Exophthalmic Goitre Based Upon Forty Operative Cases." *Medical Record*, November 5, 1904.

Removal by extirpation is preferred to operation upon the cervical sympathetic the latter having a considerable mortality and the same disagreeable symptoms which often follow extirpation. In ten cases the X-rays were used and, though not claimed as cured, they have certainly been markedly benefited in general nervousness, tumor of the muscles, tachycardia, and lastly exophthalmos. It would seem that we have here a valuable therapeutic agent for the preparatory treatment of those cases of exophthalmic goitre whose general condition is so serious as to preclude operation for the time being. The anæsthetics have been cocaine, chloroform, and ether, preceded twenty minutes by one sixth grain of morphine hypodermically. Cocaine was chosen for some of the worst types of nervous cases, especially with a rapidly fluctuating pulse, or an irregular one. No difference was seen in the character or degree of shock or thyroidism in local or general anæsthesia, but ether is preferred. The Kocher collar incision is used and a complete exposure of the gland made. One half of the gland and possibly the isthmus is removed as in these cases there is usually very little capsule and enucleation is out of the question. What can be left of the posterior capsule is saved, especially on the right side as an extra safeguard against injury to the recurrent laryngeal nerve. Thyroidism of some degree was common, but it is regarded as being due, not to handling of the tumour and so forcing secretion into the veins, for if so, it would be equivalent to hypodermic injection into a vein with immediate effect, when in reality

it comes after some hours, but is due to absorption of the wound serum with some thyroid secretion in suspension. For this reason exophthalmic wounds are drained as freely as septic processes. As loss of blood increases absorption every precaution against hæmorrhage should be taken, and every effort to replace what may be unavoidably lost by saline solution. The same holds true for any operation on exophthalmic cases. For the relief of thyroidism and tachycardia, suprarenal extract has a marked effect, but seems to be somewhat difficult of permanent control. Atropine and morphine are often of great service. Regarding the cases coming for operation, if the pulse if from 130-160, or if it suddenly fluctuates in tension and rapidity, if there is anæmia, with swelling of the feet, the patients are placed upon the belladonna treatment for some days. The more severe types are given X-rays exposure in addition, which is continued from two to six weeks.

The total number of operations on the gland was 128 with 8 deaths, 40 were performed on exophthalmic cases with 6 deaths. The writer is to be congratulated on his series and the results obtained.

Charles A. L. Reed, A.M., M.D. "The Surgical Cure of Certain Cases of So-Called Chronic Dyspepsia." *New York and Philadelphia Medical Journal*, November 26, 1904.

The following conclusions are given by the writer. The majority of cases of so-called chronic dyspepsia, gastralgia, nervous gastralgia, neuralgia of the stomach, cardialgia, and hyperchlorhydria, are, in fact, cases of ulcer, or the organic consequences of ulcer of the stomach or duodenum or both. Cases amenable to medical treatment should be cured in from five to six weeks, after which time they should be placed in the surgical category, while hæmorrhagic cases should be operated upon without the delay prescribed by medical writers. Surgical ulcer of the stomach, if neglected, may develop adhesions, perforations, hæmorrhages, or cancer, or, in the absence of these, may provoke sepsis and anæmia, which, if the underlying conditions are not corrected by operation, may, and frequently do, prove fatal. It is important, therefore, that the cases should be promptly brought to operation which, without reference to details, should establish rest and maintain drainage for the diseased organ. The comfortable after course of these cases, the low primary mortality and the permanent curative results following the operation comprise its complete justification. The operative procedure depends upon the condition found, but the majority of cases are cured by either pyloroplasty or gastroenterostomy, though it may be necessary in rare cases to excise the ulcer or, in still more extreme cases, the entire ulcer bearing area.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The fourth regular meeting of the Society was held Friday evening November 18th, Dr. F. R. England, Vice-President, in the Chair.

Dr. Armstrong: Presented a young man aged 23, who had a large tumour growing from the anterior portion of the head. The patient came to the Montreal General Hospital in July, 1898, with the following complaints: While at work in a cotton mill at Lowell, Mass., three months ago, he struck his head violently against some machinery and shortly afterwards noticed a lump. There were no signs of black or blue ecchymoses and beyond violent headache for four days there was no other suffering. The father died of consumption, mother's death unknown; two brothers and sisters alive. The mass was at that time hard and bony and some enlarged veins were present. I regarded the growth then as a sarcoma beginning in the diplœ frontal bone secondary to the injury. He remained in hospital for some time and then was discharged. He was readmitted in September and kept under observation until February, 1899. The growth had increased in size, but was perfectly hard, without any degree of softness, and was partly on the left frontal bone and partly on the right. The veins were larger; there were no signs of pressure in any part. He was again discharged and only readmitted a few days ago. The growth has been gradually increasing and we have now springing from the right frontal, the left frontal and left parietal bones a hard bony growth the size of a cocoanut. Apparently the outer table has been pushed out and expanded as one can easily trace it out and feel where it ends. The outer table seems to have been partly absorbed apparently by pressure for the top is a soft fluctuating mass. I take it that the inner table is intact or nearly so. He has no headache, no paralysis, but he is nearly blind, the left eye being the worst; his hearing is said to be normal. The ophthalmologist reports that the blindness is due to pressure and that there is atrophy of both discs, apparently not a congested condition but one due to pressure, and this is practically the only evidence of pressure that we have. The veins on the growth are very conspicuous; on the top are also two little hard areas, which are islands of bony substance, one quite distinct and the other becoming softer but still distinct.

There may be some doubts about the nature of the condition. The view has been taken that it was an angioma. The temporals pulsate rather violently but over the tumour there is no pulsation, thrill or bruit.

A sarcoma starting within the skull might come forward by absorption of the overlying bone, but in that case one would expect pulsation, and sarcomas beginning in the dura and passing up through do not

expand the bones in this way but pass up through an eroded softened orifice, the borders of which are on a level with the surrounding bone. This I think began in the diploæ and pushed the outer bones forward without seriously depressing the inner table. An exploring needle was introduced once on each side of the middle line and touched something hard, apparently the inner table, but nothing could be withdrawn through it. It is too soft for an exostosis or an osteoma. I think, still it is sarcoma, the top is soft, as such beginning in the diploæ generally are, it is semi-fluctuating, the outer table is pushed up and the edges are irregular, as may be felt on palpation and seen by the skiagram. The argument against it being a sarcoma is the duration, 6½ years, and he is still in fairly good health. There are no metastases discoverable, though a few glands are palpable about the neck and one under the left ear. The condition is an unusual one.

Dr. Smith: I would like to ask if Dr. Armstrong has any intention of operating, and in that case what condition he would expect to encounter.

Dr. England: If the blindness is due to pressure I would like to ask where that pressure is exerted in the skull and whether the sense of smell is gone. I think Dr. Armstrong would have done something before this if he had intended doing any thing at all surgically. I would like to ask if the question of ligating the common carotid has been thought of; it might produce a little evidence as to the question of its being an angioma, and if sarcoma might limit the growth, being of interest as cutting off the blood supply in that way.

Dr. Armstrong: I do not know that there is much to be gained by operative treatment. Of course the arteries could be ligated, that is very simple, but whether it would result in material benefit is questionable, the vascular supply is so widespread. Ligature of both common carotids is an operation not devoid of danger, and then we must not forget the vertebrals. The sense of smell is entirely gone.

Dr. Ridley Mackenzie and Dr. B. D. Gillies: A Case of Carcinoma of the Cardiac End of the Stomach.

This case is interesting in that it was possible to make a positive diagnosis before operation and for the fine pathological specimen obtained after death. The clinical history can be told in a few words. The patient was a man aged 66. He was markedly cachectic and emaciated, having lost 25 pounds in the past year. There was a history of the free use of alcohol. About a year ago he began to suffer from severe pain in the epigastrium and between the shoulders, coming on immediately after eating; solid food causing him more pain than liquid food. His diet for the past year had been farinaceous. He described as having the sensation of there being no inlet to his stomach and the

pain was felt in the median line 2½ inches above the umbilicus. He had anorexia and would vomit a little in the mornings. The vomit contained no bile or blood. The actions of the bowels were normal. There was no enlargement of the superficial glands. Under the skin on the abdomen were two small nodules. On deep palpation beneath the left costal arch a firm rounded tumour mass was felt, painful on pressure, and it could be differentiated from the spleen by percussion.

A test meal was given and on passing the stomach tube an obstruction was met with at 20 inches from the teeth. Vomiting brought up the meal which was found undigested and with stomach ferments and acids absent. Amongst the food shreds of tissue were found which on examination were found to be cancerous tissue. In addition the patient had endocarditis and interstitial nephritis.

The patient was transferred to the surgical side, and gastrostomy was done but general peritonitis followed. The specimen was taken from a much emaciated individual and proved to be a large colloid carcinoma springing from the lesser curvature and cardiac end of the stomach. Sections show plainly the nature of the growth. In this case the diagnosis was made from the stomach contents. The tumour mass extended up into the lower end of the œsphagus, explaining readily the clinical complaints of the patient. This extension of carcinoma through the œsophagus is quite common in contra-distinction to that through the pyloric end of the stomach which is extremely rare. In connexion with the remark made at a previous meeting with regard to the examination of subcutaneous masses in these cases, we palpated here over the abdomen and found such a mass but this disappeared just before death and at the autopsy was not to be found.

Doctor Gillies also exhibited a microscopical section of the stomach washings from a patient now in hospital from which the diagnosis was very easily made, proving that careful examination of stomach washings are of value in diagnosing such conditions.

Dr. Lafleur: The second case which Dr. Gillies has referred to is under my observation and the fragments that we obtained by the stomach washings were really quite large, as much as a large pea, and it was quite evident from histological examination that they were fragments of a neoplasm. This case presents very similar conditions to those in Dr. MacKenzie's. We are very apt now to get fragments of neoplasms in the stomach by the new stomach tube which contains a great many more holes and has a somewhat thin edge. The patient has an almost empty stomach and retches a great deal, and it is quite evident that this rubbing against the wall will rub off a piece of neoplasm. In this case there was a little blood. In cancer of the liver one sometimes manages to strike a cancerous nodule and so get a

boring of the liver which shows quite clearly the nature of the malignant tissue.

Dr. England: I would like to ask whether the patient had been able to take a fair amount of nourishment. As this patient died so soon it is a question here whether gastrostomy could not have been done earlier.

Dr. Armstrong: With regard to this point I would say that the patient came into the hospital very late, that he declined to have anything done as long as he could swallow at all and it was only when he could not swallow even milk that he decided upon operation so that there was absolutely no resistive or reparative power left.

Dr. Abbott: With regard to the frequency of shreds of the mucosa being in the stomach washings I may say that while in Berlin some two years ago I saw quite a number of sections of stomach washings and in nearly all could be found sufficient evidence to make a diagnosis.

Dr. MacKenzie: The man was operated upon as quickly as he would allow and had been able to take but a very slight amount of nourishment for a long time.

Dr. W. J. Telfer: A Case of Abscess of the Pancreas.

J. A., single, aged 35, farmer and dealer in farm produce. *Previous history* good with the exception of occasional attacks of acute indigestion. In August last had an attack of boils on the face. Total abstainer; no venereal disease. *Family history* excellent; father died aged, mother still living; brothers and sisters alive and well. *Last illness*: Was taken sick on September 16th last; symptoms of acute indigestion with constipation; relieved by enema. Next day symptoms recurred, severe pain in right loin with chill. From September 18th to 25th typhoid temperature persisted with severe chill and sweating on the night of the 24th. On 25th was admitted to the Western Hospital.

Course of Disease: Temperature was septic from the first with chills and sweats daily; no vomiting, bowels constipated. Was able to bear free palpation over the whole abdomen; some headache, relieved by ice-cap. On 11th day in hospital (19th day of disease) complained of a tender area below and to the right of the ensiform cartilage, and slight crepitation was discovered at the same time over the base of the right lung. At this time patient was unable to lie on left side on account of pain in front. This pain disappeared by the 22nd day of the disease but the patient then developed slight distension of the epigastrium and also slight jaundice, both of which gradually increased up till October 26th, the icterus changing rather to a cachectic dark brown with the conjunctivæ quite deeply stained. During this period percus-

sion was tympanitic over the whole abdomen, especially the epigastrium. Some flatus was passed per rectum. The patient was able to take nourishment and water freely. On October 21st had some hiccough. The bowels were emptied by enema every second morning up to the time of rectal medication. The stools were characterized "milk" stools, usually semi-formed.

Termination: Death from exhaustion on the 24th day of the disease. For the last three or four days the patient had been delirious and unable to swallow at times. The day before death showed signs of collapse and appeared to suffer acute pain though the temperature during these last days was mostly subnormal.

Treatment: The patient was kept on a milk diet; he was sponged, and we attempted to abort the chills by dry heat; quinine was given during the first week in the hospital but appeared to have no effect. On the 15th day in hospital collargol was commenced per rectum, three grains twice daily. This undoubtedly controlled the condition sufficiently to prevent the severe chills as after commencing this treatment the rigours ceased. After October 27th the patient was given freely saline solution by transfusion and per rectum which seemed to improve the pulse and the mental condition. The temperature then was mostly subnormal; the hiccough was relieved by champagne. Strychnia and morphia were given hypodermically as indicated for the pulse and sleeplessness. The Widal and diazo tests were done frequently and were always negative. The blood showed a marked leucocytosis; on October 10th Dr. Gordon reported 20,800, and on October 18th Dr. Nicholls did a serum test for tuberculosis and reported negatively. The urine was normal at first but later showed bile pigment and an occasional epithelial cast. During the last few days there were slight albumin reactions to the contact test, no sugar, the specific gravity was normal throughout.

On October 27th, in consultation, it was decided to explore the abdomen but the patient collapsed before anæsthesia was complete and was with difficulty restored. The operation was abandoned. A partial autopsy was secured, which was done by Dr. W. J. Derome, whose report is as follows:

Dr. W. J. Derome: I was only able to obtain a partial autopsy in this case. An incision was made to the right of the median line extending from the ribs to below the umbilicus. On opening the abdomen sero-punulent fluid oozed from the incision which was strongly tinted with bile. The liver appeared enlarged, of a mottled greyish-color and rather soft. The gall bladder was largely distended, the size of a large orange; palpation, however, did not reveal the presence of calculi. A little to the left of the suspensory ligament of the liver,

on examination, the surface was found to be rather soft, giving the sensation of fungoid and in the centre was a depression and an orifice, allowing the entrance of the index finger. I explored this opening and brought forth a creamy pus. I found that this sac went to the pancreas. At the head of the pancreas there was a notch which felt as if it had been scooped out of the body of the gland. The spleen was enlarged, the appendix region normal. We were not allowed to remove any organ, so a full examination could not be made.

Dr. Lafleur: This was a case which presented unusual difficulties in diagnosis; in fact none was made beyond the fact that the patient was evidently suffering from sepsis, but where that was we could not make out. At different times we thought of some condition about the liver or in the liver itself, in connexion with the gall bladder or bile channels, with the stomach, and even the possibility of it being an appendicular abscess. The only real indication we got at all was that there was something abnormal at the base of the right lung, that is, a few crepitations, but even this cleared up. We also thought of ulcerative endocarditis, but there was nothing definite. The absence of any localizing signs made the case obscure from beginning to end. The urine was examined and no sugar found. I would like to ask Dr. Derome if he opened the stomach, it might have been a gastric ulcer which had ulcerated and involved the pancreas secondarily.

Dr. Derome: The stomach was opened, but the ulceration which I mentioned seemed to open about an inch below the ensiform cartilage. The stomach seemed to be normal as well as the bowels, except a few peritoneal adhesions between the bowels and the stomach.

Dr. Archibald: The question of sugar in the urine in pancreatic disease has always been of interest to me. I used to understand that with a pancreatic lesion one was rather liable to get sugar in the urine, but it has been proven that such is not the case and that, as stated in a monograph upon the surgery of the pancreas which appeared a few years ago, sugar in the urine does not appear in pancreatic disease until practically all the pancreas is destroyed; that it is like the thyroid and other ductless glands, it needs but a very small portion of the organ to preserve function. I was therefore not surprised to hear that in this case no sugar had appeared. I would like to ask if Dr. Telfer examined the stools. With regard to collargol I may say that I have used it several times myself in the form of the ointment, but I have seen no advantage in cases of septicæmia.

Dr. Fry: Dr. Opie, of Baltimore, and others have recently written extensively on this question of gall bladder disease and particularly—in the case of gall stones. And this leads me to ask if Dr. Derome palpated the ducts. He mentioned that the gall bladder was greatly

distended and there seems to be no other explanation than that there was obstruction of the ducts and this might suggest that the condition of the pancreas was secondary to liver or gall bladder disease.

Dr. Derome: Nothing was noticed in connexion with the gall ducts though it was quite possible that the inflamed area over the pancreas might have caused obstruction to the ducts with subsequent distension of the gall bladder.

Dr. England: Mr. Mayo Robson in his last paper published in the Montreal Medical Journal takes up the relationship between disease of the biliary passages and pancreatic disease and he shows very forcibly by his photographs of sections where the pancreatic duct is sometimes found to be anomalous and in this way that any obstruction to the common duct may cause the infected bile to be forced back into the pancreatic duct or ducts, as the case may be, and in that way have an original focus of infection. In such obscure cases, this should be thought of as the gall bladder is so frequently infected. I would like to ask Dr. Telfer if he is satisfied in his own mind that these attacks of indigestion were not of the nature of biliary colic.

Dr. Telfer: I frequently saw the stools that were voided following an enema, prior to medication by the rectum, and they appeared to be the ordinary milk stools with a little bile, light yellow and semi-formed. After we commenced rectal medication there was not very much to be seen. It seems to me that some of the bed pans I saw occasionally might have been a little fatty, but at the time this was not in my mind and I did not remark it especially. With regard to the possibility of gastric ulcer there was no vomiting at all and nourishment was taken readily, there was no tenderness on quite severe palpitation over the stomach. With regard to the attacks of indigestion I saw him after some of these and I could not say but that they might not have been colicky; he never was jaundiced and was always relieved by an injection, something that would empty the bowel freely, and from the history, his irregularity in taking meals seemed to explain the attacks readily, that is, going for long without food, then eating heartily at night.

Dr. Blackader reported a case of glandular fever in his practice and as these cases usually occurred in epidemics he asked the members to notify him should any come under their care.

Dr. Monod read a paper on hæmorrhage from the uterus which appears on page 18 of this number.

Dr. Lockhart: There is scarcely room for criticism in this admirable paper, and yet I am sorry the reader did not include the form of uterine hæmorrhage due to general disease. There is quite a large proportion of uterine hæmorrhages which are due to disease of

the kidneys, cardiac disease, diseases of the liver, etc., and here operative measures will certainly not yield any beneficial result though medicinal treatment may. In these papers upon uterine hæmorrhages you very rarely see the subject treated at all except from a purely local standpoint and I think herein is the mistake. As regards the treatment of the condition that of course depends very largely upon the cause. Many of the cases of miscarriage and the hæmorrhage of puberty will be benefited more by tonics, change of air and change of general surroundings than by any other method, and in these last local treatment should be discouraged. There should be no school or gymnastics; a sea voyage is one of the best measures.

As regards the use of adrenalin I have used it a few times with marked benefit. In several cases where there is atony of the uterus sometimes the actual curette will not even temporarily check the hæmorrhage and in such cases I pack the uterine cavity with plain sterilized gauze saturated in a solution of adrenalin. Most of us have tried the perchloride of iron. In many cases that will work where others fail. As regards the uterine injections of hot water, Milne Murray advocates very small intrauterine douches for the immediate control of hæmorrhage in preference to large ones which, while they contract at first, bring on relaxation later. With regard to superheated steam the reports show that it is well worth a trial in certain cases.

Dr. Smith: A great many of the cases which come to us have this as the principal symptom, and very often it is the only symptom of a general condition. As Dr. Lockhart has remarked most of these hæmorrhages from young girls are due to poor nutrition and they rapidly respond to general treatment, iron, strychnin, phosphoric acid and sunlight and fresh air with a good plain diet. With regard to the surgical treatment we still have a lot to learn. In many of my cases where I have removed nearly all of the ovaries and both tubes hæmorrhage has still persisted. It is interesting, too, to note that a small cancer nodule may escape the ordinary curettings. I had a case where the severe hæmorrhages came on some two years after the menopause; curettings did not improve matters and on removing the uterus an angry looking ulcer was found which was proved definitely to be cancer by the pathologists. Curetting, however, is of great value among the surgical proceedings and has given great satisfaction if done very thoroughly and followed by the application of an iodide and carbolic acid and well packed. One should find no difficulty in stopping these hæmorrhages either by constitutional or local treatment. Subinvolution is a great cause of hæmorrhage. For this purpose the galvanic current is of great value. I tried adrenalin only once, injecting it into

the uterus, but the patient suffered severely and I did not try it again. The great advantage of alum should be borne in mind. In the patients I mentioned with removal of a large portion of the ovaries, and still hæmorrhage, a tampon of alum proved efficacious.

Dr. Chipman: I am rather glad Dr. Monod based his classification upon a pathological basis rather than an etiological one. We know that the mucosa is built up of epithelium, parietal and glandular and that if that mucosa is irritated in any way it gives rise to certain results; sometimes it is the connective tissue, then again the blood vessels, and the interstitial tissue which is affected, and I think that is the right and scientific classification. In the same way in the muscular wall under certain irritative conditions we get the different component parts of that wall differently affected. The reader has spoken of, to me, a new pathological entity, and that is angiomatous metritis, and I would like to ask Dr. Monod whether or not in the cases he has spoken of the blood vessels were definitely formed blood vessels, for I have not seen a case of true angiomatous metritis, but I have seen cases of chronic metritis where there was a certain amount of œdema, with enlarged lymphatics and where on section the organ looked intensely hæmorrhagic, but the vessels were not blood vessels but rather lymphatic channels. I should also like to ask if in this any glandular or epithelial elements were found. A recent writer brings forward a new condition which may lead to menorrhagia and metrorrhagia, which he calls an adenomyoma. He simply says there is a great thickening of the muscular wall and that throughout these muscular elements there are numerous glandular elements; it is not circumscribed in any way. He cites a case of a woman who nearly bled to death on several occasions and after removal of the uterus and careful examination of the condition he named it an adeno-myoma. Bland Sutton has formulated into a definite pathological concept something we have known for several years, the condition which he calls fibrosis uteri. The pathology of this condition is extremely interesting. We all know the big, mobile hard uterus, with uniform enlargement of the walls, patulous cavity. The proportion between fibrous and muscle tissue is lost, rather an excess of fibrous tissue, and the woman who has usually had a large family begins to lose blood and the more you curette the more blood she loses, in fact curetting is the worst thing. We have therefore to-night three pathological entities which are new, the angiomatous metritis, the adeno-myoma and fibrosis uteri. All treatment is purely tentative and empirical until the pathological condition is undestood. I could strongly urge that careful pathological study of all these cases be made. The local treatment has been gone into very thoroughly, and I quite agree with everything that has

been said. I only feel that too radical treatment is often followed by accident. I know something of live steam,—one case developed atresia of the cervical canal with a following blockage and damming back of the blood, which led of necessity to a vaginal hysterectomy. One must not carry the local treatment too far. This paper of Dr. Monod's has given us once again the opportunity to say that in the matter of the menopause, hæmorrhages occurring at or after that time, demand a thorough examination of that uterus. All of us who have to do with operative work knew how ghastly the picture is of cancer of the uterus. Now hœmorrhage though it is not the first symptom of cancer of the uterus is often the first symptom. I have a case in the hospital which has been bleeding for two years with cancer of the body of the uterus.

Dr. Monod: With regard to the cure of the condition, as Dr. Smith has so confidently stated, I hardly think he has come across a case of an angiomatous uterus. There is no hypertrophy of the mucous membrane and the epithelium is normal, but the vessels are all dilated; there is really a vascular new formation and secondarily a kind of angioma of the mucous membrane and this can be detected even outside the uterus.

Dr. Smith read a paper on the placing of perineal sutures in position before laceration takes place. This paper appears on page 24 of this number.

Dr. Morrow: One objection is that there may be some difficulty in obtaining the patient's consent to this procedure.

Dr. Chipman: I think in difficult cases there is no objection to its being done. Dr. Smith has told us that there is no retraction of the muscles in cases where the suture has been placed in beforehand. If you do not happen to get your sutures in the right place the result will not be good, the muscle might retract past the suture. We all know that if we do not take a proper hold with our suture we are apt to get developed a rectocele, that is, the mucosa slips past out sutures.

Dr. England: It occurs to me that while the sutures might be introduced in this way for a simple laceration of the superficial parts, in the case of lacerations which are bad, and really need surgical treatment the laceration is not always centred in the middle line but runs up towards the side. These I think require a different treatment. I think it is not always possible to foretell the direction in which the tear will appear. And again I think the strain which is sufficient to separate the parts may be likely to tear out the sutures.

Dr. Smith: In my paper I mention that the first stitch is to be 2½ inches in the vagina, for the very purpose of taking in any of the tears in this direction, but in tears higher up than 2½ inches this is not of benefit and requires one higher up still. It is so hard to get the parts

together again without such a preventive means that I thought this method would be at least an aid to us. The stitches are not fastened and therefore the tissues spread just the same as if they were not there.

The fifth regular meeting of the Society was held Friday evening, December 2nd, Dr. Macdonald, President, in the Chair.

Dr. Gillies exhibited a pathological specimen of congenital absence of one kidney. The patient was under the care of Dr. Molson, but died in a comatose condition after repeated convulsions. No history was obtained, except that the man was a sailor, who had been discharged on account of intemperate habits, which he had persisted in up to the time of admission to hospital. There was a slight trace of albumin found in the urine, but nothing else of a definite character just before death. The autopsy showed a right kidney 14 cm. from above downwards, 8 across and 5 from before backwards, indicating that compensatory hypertrophy had taken place. There was complete absence of the left renal artery and veins and complete absence of ureter, the suprarenal however was present. In the records of the autopsies at the Montreal General Hospital, out of 2,469 only 5 specimens show congenital absence of one kidney. In 1897 one was obtained with absence of the left, with persistence of the left uretor. There is a note in Ziemsen which states that there is always absence of the ureter when the kidney is absent; persistence of the ureter would mean that at some time in early life there was displacement of the kidney, so that the two fused. The case just mentioned was a man who died of chronic interstitial nephritis. In 1901 the Medico-Legal Department obtained a specimen of absence of the left kidney and ureter from a man who had hanged himself. In 1902 there was a case of nephritis with absence of the ureter, suprarenal and kidney, also of the left side. Since then I have had two cases of absence of one kidney, one a male with myocarditis showing absence of the right kidney, right renal artery and ureter, the other somewhat similar with persistence of the suprarenal. These anomalies are more frequently found in males than females; some give a percentage of 65 males and 35 females.

Another specimen is that of a horse-shoe kidney obtained from an infant. All the structures were normal, with the exception that the two kidneys were joined by kidney tissue in the lower part.

Dr. Shepherd: I was much interested in this case, and I would like to report a case of single kidney which occurred in the dissecting room at the College a week or two ago. This is the first one out of 5,000 subjects which have passed through my hands that I have met with, and I think this percentage at the Montreal General Hospital is very

large; it is generally calculated that one in twenty-four to twenty-five hundred occurs. Of course, we would expect to find the suprarenal capsule even with absence of the kidney. There are some cases reported by Bruce Clarke in his book, and Polk, of New York, reported a case of removal of the only kidney in a woman. She had complained of a lump in the groin, which, after removal, was found to be a misplaced kidney. The patient lived eleven days afterwards. It is quite probable that such cases have occurred.

Dr. Buller showed a living case of epithelioma of the eyelid, which had extended after a good many years deeply into the tissue and destroyed the eye. An interesting fact in this case is that the man came to him some six years ago with a small nodule at the inner extremity of the left lower eyelid, and he says that he was advised excision, which he refused, and now at this date it has gone on to destruction of the eyeball and an enormously thickened indurated lid, so tense that the eye could not be seen at all. The pain was very severe, and as the case appeared to me inoperable, the X-ray treatment was tried, which has had the remarkable effect of softening all the tissues and relieving the pain a great deal. The lid can now be raised so as to see what remains of the eye above.

Dr. Buller also exhibited a case evidently of Melanotic Sarcoma of the anterior part of the choroid tract. The patient received an injury some fourteen years ago from a piece of coal striking his eye (he being a railway man). For a few days the eye troubled him, and beyond a slight suspicion that the sight was not as good as before, nothing else was noticed until during the last three months. The pupil, before atropin was put into it, was oval transversely, dilating upwards, but rather fixed as regards straight line below; it responded to light and dilated moderately with atropin. The upper part appeared clear and almost normal, but in the lower it was easy to see two rounded globular masses coming up from behind the iris, showing that the tumour had grown pretty rapidly. Its pigmented appearance would indicate a melanotic condition, while the rapid growth suggested the sarcomatious variety.

Dr. Hamilton: I would like to know just what the definition is of melanoma, as used broadly by Dr. Buller, and to ask if there is any evidence of recurrence or metastases elsewhere in this case.

Dr. Buller: I have not looked for any such evidence, but I intend to have a minute examination made of his liver, because many oculists maintain that these cases are really secondary to disease of the liver, though personally I would take the other view, as I have seen so many of these cases come on after an injury, and would classify the trouble as of a local character, and that the liver trouble afterwards is a com-

paratively secondary condition. However, the question is a moot one, and ought to bear investigation. The term melanoma is used broadly in connexion with these pigmented conditions of the eye. The simple term melanoma is used to describe a growth of a pigmented character, which is of benign origin, and does not seem to extend, and has no malignant characters. I saw a case of this kind many years ago, and the same condition persists to-day, probably congenital.

Dr. Shepherd exhibited two specimens of large stones removed by the suprapubic method, and advocated this method over crushing, which, he claimed, required a practised hand. The two cases were of interest in that they exhibited no symptoms at all until within a short time of operation, which would direct the physician or surgeon to the fact that they had stone, notwithstanding that these stones were very large, and must have been present for a long time. The first case was a man of 84, who was a patient of seven or eight years ago, and at that time there was no evidence of such a condition present. In 1901, while in Scotland, he had an acute attack of what was diagnosed as cystitis; some months later he had another attack, supposed to be due to an enlarged prostate. In 1902, on landing at Halifax, he was treated for the same thing. I saw him here this autumn, when he had very acute pain, frequent micturition, every ten or fifteen minutes, and on passing a sound I immediately came upon this enormous stone, which I could push back. The pain ceased, but he came back a few days afterwards, when I removed it, and it will be seen that it is hardly possible for this large stone to have formed since 1901. The other case was that of a younger man, aged 45, and the stone weighs about an ounce. This man had also been going around without any symptoms of stone until within three months before I saw him. A few years ago he suffered from stricture, and when the present attack occurred, it was thought to be of that nature. I examined him, and immediately came upon this stone. In this case I sewed the bladder up, and there was a very slight leak for about seven days, which led to a small slough, which completely healed before three weeks, and he is perfectly well now. In both these cases I operated with the sound in the bladder, this, I think, being a much more rapid way of getting into the bladder. In both of the cases there was a good deal of ulceration in the bladder, which accounts for the great pain, which was especially marked in the older man.

Dr. Armstrong: I must take exception to the broad statement that this is the better way to remove stones as a rule; it is generally done in old men wih enlarged prostates such as this case, but in the majority of cases crushing is so thoroughly safe and so satisfactory that I think it is the better way, and it certainly has better statistics. I think the

difficulties in crushing are raher over-rated. With a fairly good bladder and proper instruments, there should be little trouble. I was very much interested two years ago in Leyden, in going through the old museum containing Boerhaave's specimens, to find a very large phosphatic stone, which is supposed to be the first stone ever removed by the suprapubic method. It was removed by an individual from his own person, and it is said that the man got well. The knife is also preserved with which he removed the stone.

DR. SHEPHERD: I do not mean to say that every stone should be removed suprapubically, but I think crushing does require much practice, which in this country one does not get. I remember myself going the rounds with a surgeon in Paris, where in one morning he crushed five stones in the ward and removed a broken catheter. In this last the way he demonstrated the position of the foreign body and the ease with which he extracted it was simply marvellous.

DR. MORROW exhibited an obstetric bag. He drew attention to the feeling expressed in recent text-books that the traditional black bag was not sufficient for the requirements of modern technique. The bag which he exhibited consisted of two divisions, of which the upper contained all that was usually required in normal labour, while the lower contained in a large sterilizer the various instruments and appliances for operative cases. He admitted that portability had been sacrificed for completeness, but considered the latter the more important.

DR. MARTIN and DR. HARDISTY: The first case we wish to report is one of the concurrence of a renal calculus with early renal tuberculosis. Our first dealing with this patient was the examination of a specimen of urine which had been sent us, and showed marked acidity and a specific gravity of 1024, 5 grms. albumin to the litre, a fair amount of pus and some epithelial cells, evidently from the pelvis of the kidney. The diagnosis suggested was between renal calculus and tuberculosis of the kidney (though no bacilli were found). The patient came to us later, giving the following history:—Since June he had suffered from pain and burning at end of penis, occasional frequency of micturition, and from time to time he had hematuria. Another specimen of the urine showed a similar condition to that described above. During August and September there had been a good deal of frequency. Shortly after he came to the hospital with this stone, which he had passed a few days previously. He had never lost any flesh or had any indication whatever of tuberculosis elsewhere, his general condition seeming to be very good, apart from the urine. Examination was again made for tubercle bacilli by Dr. Hardisty, and after a number of slides were stained the bacteria were found. He was then given some tuberculin, and there was a very marked reaction,

so that evidentally this patient had both a simple calculus and renal tuberculosis. The condition is clinically, of course, of interest because the passing of the stone alone might be considered sufficient for a diagnosis, and the tuberculosis might go on till it was too late to think of anything to relieve the condition.

The next case is that of a man, aged 73, who died suddenly in the hospital, his reason for entry being a cancer of the stomach. He gave a history of a rather acutely developed dyspepsia a year ago, which had persisted ever since. There was progressive emaciation, pain after eating and much distress, but no vomiting up to time of admission to hospital. This, however, is of course net uncommon in cancer of the stomach. Examination showed a mass situated in the neighbourhood of the pylorus or gall bladder; further a marked emphysema and bronchitis arterial sclerosis; examination of heart showed some enlargement; sounds distant but a systolic murmur could be heard at the apex, not transmitted very far in any direction. A slight trace of albumin was found in the urine. After three or four days, when apparently quite comfortable, he sat up in bed to ask for something, and dropped over dead. The autopsy showed a condition of carcinoma of the stomach, as was suspected, and with that a very marked arterial sclerosis, myocarditis, with dilatation of the heart and *a ball thrombus situated over the aortic valves,* probably an ante-mortem thrombus, irregular in outline, not very spherical, but situated in such a way that it had *obstructed the coronary artery for a sufficient length of time to cause the fatal result.* Whether or not that was the cause of death, it is hard to say. The coronary arteries themselves seemed patent at the orifices.

A ball thrombus is not usually situated in that region; they are usually found in the auricle, or at the apex of the ventricle. Those in the auricle which cause death are usually oval in shape, and they make their way sufficiently far into the auricular orifice to cause fatal results. It is difficult to say how a thrombus could have formed here, and why it should not have been broken up. What constitutes a ball thrombus is the combination of free mobility of a clot in the orifice, and one so imprisoned that it could not get into the next orifice met with in the course of the circulation.

Dr. Hamilton: I saw this case at autopsy, and it occurred to me that it was impossible to explain why a clot of such size did not follow the course of the artery borne on by the aortic blood stream, and thinking over the matter, it would appear that possibly at the time of death, or immediately before that, this clot was displaced from its site of origin, and after that it may have occluded the coronary artery.

Dr. Archibald: The first case is certainly a very interesting one,

more especially from the clinical side. Concerning the pathological question, there are certain points which are not only interesting, but which are of considerable practical importance. First of all, the finding of tubercle bacilli in the urine. That is a rather difficult thing, excepting in cases where they are passed in large numbers. I have frequently examined a dozen slides of pus from the urine, put through the various processes, without finding a single bacillus, and coming upon them in the last slide; at other times it was the 24th and 30th slide which gave positive results. The bacilli, in the first place, are hard to find; secondly, when found, one must examine carefully, as the resemblance of the smegma bacilli to tubercle bacilli must be taken into account. From 1894 to 1896 various *arbeits* appeared in Germany, bringing up again this question, and indicating that frequently these bacilli were taken for the tubercle bacilli. I remember a case of a woman with a stone, where, after a number of examinations, we found what was apparently tubercle bacilli, but it proved to be a case of calculus nephrosis and not tuberculous pyonephrosis, and the bacilli were smegma bacilli. In the male it is not frequent to find the smegma bacilli, as the conditions of securing the specimen are much more sure than in the female. With regard to staining, the ordinary stains are not sufficient. Gabbet's method is entirely inefficient for urinary examinations. We have to reckon that the decolorization by means of acid will not affect the smegma bacillus any more than the tubercle bacillus. It is stated a limit of eight hours should be placed upon the effect of alcohol in decolorizing tubercle in urine; that is, that under eight hours the smegma bacillus may also remain. This is perhaps exaggerated. The important points are the examining of a great many slides of a sedimented centrifugalized urine and the using of a very careful technique in examining.

Dr. Smith: In the Annals of Gynæcology there is a paper on 13,000 operations with 12 deaths from embolism. One of these was embolism of the coronary artery, and the author details the different operations for the different diseases in which this occurs.

Dr. Mills: We know that experimental ligitation of both coronary arteries almost invariably puts the heart into fibrillar action or causes it to cease to beat, and in a few seconds usually. In the case of obstruction the chances are that there would not be recovery of the heart when the interference was of some duration. I do not understand, however, that these coronaries were definitely obstructed, nevertheless one can imagine that thrombus being pushed during systole against the opening of the artery, and thus the heart for a time being deprived of its proper nutritive supply, and that this effect being cumulative, might in the weakened subject eventually produce death. The cause of death in this case nevertheless seems somwhat obscure.

Dr. Martin: With regard to the renal tuberculosis, a point worth considering is the importance of trying the tuberculin reaction when one is not certain of finding the bacilli in the urine. The smegma bacillus is now, as a rule, easily detected by the proper use of alcohol. So far as the clot is concerned, I think Dr. Hamilton's suggestion is a very reasonable one, because the clot looked as if it were broken off, but there was nothing in the auricles to show the source of it, and the eroded portion referred to was on the inside of the valve, that is, on the aortic surface of the valve, and here one does not usually have vegetations. There was no evidence of an endocarditis on the ventricular surface of these valves, and I do not think therefore that this would likely be the source of this clot. With regard to the coronary arteries and the amount of obstruction necessary to cause death, one would think that this would depend a great deal on the disease in the muscle; if it is healthy, a large obstruction would not be so badly felt, as would even a small obstruction with a diseased muscle.

Dr. R. P. Campbell: Reported a Case of Anthrax.

The sixth regular meeting for session 1904-05 was held in the Society's Rooms on Friday evening, December 16th.

Candidate for resident membership:—Dr. G. D. Robins.

Candidates for temporary membership:—Resident Staff of Hotel Dieu:—Drs. Hamelin, Lebel, Lachance, Cousineau, Desmarais, Meunier, Marcil and Moreau.

Programme:—Discussion on Actinomycosis:—Jas. Bell, M.D.; C. B. Keenan, M.D.; Chas. McEachran, D.V.S.; W. W. Chipman, M.D.; J. G. Adami, M.D.; and W. F. Hamilton, M.D.

A full report of this discussion will appear in the February number.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXXIV. FEBRUARY, 1905. No. 2.

ACTINOMYCOSIS: A DISCUSSION BEFORE THE MONTREAL MEDICO-CHIRURGICAL SOCIETY, DECEMBER 16TH, 1904.

INTRODUCTION AND RECITAL OF CASES.

BY

JAMES BELL, M.D.

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Actinomycosis is an infectious disease common to man and some of the domestic animals, notably bovines, but also found in sheep and pigs. It is due to the presence in the tissues of a vegetable parasite, the *Streptothrix Actinomycotica*, which gives rise to an inflammatory process, generally chronic, but sometimes acute. The lesion produced is characterized by much proliferation of tissue and little suppuration, and in the chronic forms, situated externally, it falls into the class of granulomata and is likely to be confounded with other granulomata, especially chronic tubercular and tertiary syphilitic lesions. Indeed, I have not the slightest doubt that many cases of actinomycosis have been and are still constantly overlooked in this way.

The diagnosis is most important as we now know sufficient of the character and progress of the disease to be able to adopt definite lines of treatment, when it is recognized. The parasite was first recognized by Langenbeck in 1845 in a patient with caries of the lumbar vertebrae, but the history of the disease, in man, dates from Israel's work, published in 1878. According to Warren, Murphy was the first in America to report a case of actinomycosis in man; and he (Murphy) states that up to January 1st, 1891, there had been reported altogether 250 cases of actinomycosis in the human subject. A great many cases have been reported since, and, as I have already said, I am sure that a great many have been overlooked. Absolutely certain diagnosis depends upon the discovery of the parasite, and this is always more or less difficult and often impossible. In old cases with sinuses which have been discharging for a long time demonstration is very difficult indeed. Clinical diagnosis will often be practically convincing, but cannot, of course, be final in itself. The lesions of actinomycosis may be found in almost

any tissue of the body, the favourite sites being the skin and subcutaneous tissues, especially about the face and neck, the mouth, pharynx and alimentary canal and the lungs. The actinomyces are frequently carried by the portal circulation to the liver and metastases through the blood current to other remote organs are common, while extension by the lymph channels is rare, and primary invasion of bone probably does not occur.

Some observers have succeeded in inoculating animals, but it is believed that the disease is rarely, if ever, communicated directly from one animal to another, or from an animal to man, either by contact or by the use of the flesh of actinomycotic animals as food. The parasite enters the body directly by the mouth, by ingestion or inhalation, or through wounds of the skin; it does not enter through the sound skin. The fungus occurs as smut on certain grains and grasses, notably the bearded grains, as barley and rye, hence the subjects of the disease are generally from rural districts, and it will easily be understood that fruits, grains and grasses in their natural state may be the means of conveying the parasite to the mouth, whence it may enter through wounds or abrasions of the mucous membrane of the mouth or any part of the alimentary canal. It is also likely to be inhaled with the dust produced by threshing. Actinomycosis is said to be much more common in Europe than in America, and to be especially common in certain districts of Russia among the peasant population, where rye is grown extensively for food. It is also a very common disease of cattle in these same districts, but I am unable to say whether the same conditions have been observed in this country or not.

Clinical diagnosis is based upon, *first*, the tendency to much proliferation and tissue increase, with relatively little suppuration; *second*, the tendency of the fungus to extend from the point of entrance outwards, and to find its way into the blood current. For example, when the parasite enters the mucous membrane of the mouth, as it frequently does through the ulcerated gums around carious teeth, it extends to the cheek, and when it goes directly into the alimentary canal it extends into the surrounding tissues from the intestine, and often ultimately to the liver through the portal circulation. *Third*, the presence of yellow granules in the pus. This sign, in my experience, is not very reliable; I have often found such granules in pus which seemed to indicate actinomycosis, where further investigation failed to corroborate the suspicion, and, on the other hand, I have several times failed to recognize any such bodies (although looking for them) where the Ray fungus was subsequently clearly demonstrated. The wide range of situations in which the lesion may be found and variations in its acute-

ness or chronicity, coupled with the fact that until recently it has generally been unsuspected, make it liable to be mistaken for a great many diseases. Intestinal lesions are apt to be mistaken for appendicitis or cholecystitis, lung and pleural lesions for empyema, and the chronic superficial lesions for the lesions of tertiary syphilis or tuberculosis. It can hardly be mistaken for either cancer or sarcoma.

The prognosis depends largely upon the site and the acuteness of the lesions. The lesions of the deeper tissues are almost always fatal. Visceral lesions are generally fatal, while superficial lesions are more promising, and indeed some superficial lesions do not seem to be very serious at all. The formation of a calcareous delimiting boundary, which is so common in the lesions of cattle, forming "lumpy jaw," is not observed in the human subject.

Treatment consists in, first, radical extirpation of the diseased tissues, where this is possible; second, curettage, with or without the application of nitrate of silver or iodine compounds in some forms; and third, iodide of potassium internally. If all the grossly diseased tissue is removed, there will be no recurrence. Curettage, while sometimes successful, is not, in my opinion, to be relied upon; and radical extirpation is a much safer procedure where it is possible. The iodide of potassium has seemed to give almost marvellous results in two cases which I have observed, but in other cases it has had no effect whatever.

Having thus briefly outlined the main facts of the disease, I will proceed to give a short resume of my personal experience of actinomycosis, mentioning only the skeleton facts of each case. Since the middle of March, 1900, I have seen nine cases in which the fungus has been demonstrated microscopically. They are as follows:—

Case I.—R. C. McL., aged 22, farmer's son, Oliver's Ferry, Ont., came under observation March 27th, 1900, for what had been diagnosed as a right-sided empyema discharging through a bronchus. Exploratory puncture failed to discover anything in the pleural cavity. On the 23rd of May portions of the 10th and 11th ribs were resected in the mid-axillary line. Adhesion of the lung to the diaphragm was found, communicating with a mass situated in the dome of the liver. This was not considered removable, and drainage was established. A portion of the mass was removed for examination. The patient developed brain symptoms on the 12th of June, and died of cerebral metastasis on the 19th. A post-mortem examination was made by Dr. Adami, who discovered the actinomyces.

This patient had had right-sided pleurisy twelve years before admission to the hospital, but had recovered perfectly, and had remained well until January 1900. The first symptoms of the final illness were pulmon-

ary, and were evidently due to invasion of the lung from the lesion in the liver. There was no history to show when or how the primary lesion had occurred, but it was probably intestinal and prior to the pleurisy above mentioned.

Case II.—W. H., customs officer, aged 54, Farnham, Que., came under observation April 26th, 1900, with a mass in the right lumbar region and contraction of the psoas muscle. His illness had begun early in February with a sudden attack of adbominal pain and diarrhœa, which had lasted more or less continuously till March 23rd, when he first noticed his inability to fully extend the right thigh. The abdominal pain and diarrhœa disappeared about this time. On the 29th of April the mass was exposed and incised, but no pus was found, only a yellowish, semi-diffluent, necrotic substance, and firm inflammatory tissue.

This patient took large quantities of iodide of potassium, but gradually sank and died on the following January (1901).

Case III.—R. McN., aged 38, general merchant, Bryson, Que., was brought to me with a diagnosis of chronic appendicitis on the 31st of August, 1902. His illness had begun about the 25th of June with moderate pain and tenderness in the right iliac region, soon followed by the development of a tender palpable mass in the appendix region, and pain down the front of the thigh, which caused him to walk with a slight limp. His condition did not vary much until September 1st, when the appendix was removed. It was found lying behind the cæcum in a firm mass of inflammatory tissue. There was no pus. The appendix was swollen and its mucosa ulcerated in parts, and it contained two small seeds which, after examination, were thought to be flax seeds. Suppuration soon occurred, and the fungus was found in the pus; a mass of inflammatory tissue developed, several operations were performed, iodide of potassium was given in large quantities, but the patient sank gradually and died several months afterwards. He left the hospital on the 5th of December.

Case IV.—J. W. S., aged 36, farmer, North Williamsburg, Ont., was brought to hospital on the 22nd of April, 1903, for immediate appendix operation. His illness had begun six weeks previously with pain and tenderness across the upper part of the abdomen, and had continued with varying severity until he came to hospital. On admission, there was a large palpable tender mass in the appendix region, and operation was performed on the 24th of April. A large mass of infiltrated tissue was exposed lying behind the cæcum and extending down to Poupart's ligament. On opening it up a considerable quantity of pus escaped. Actinomyces were found in the granulation tissue removed, but not in the pus. The wound was packed with iodoform gauze, and healed satisfactorily. He was discharged June 2nd, 1903.

This patient was readmitted on the 15th of August, two months and a half later, with very severe pain and tenderness along the right costal border. He had never been quite well, and three weeks before this second admission pain had begun in his right chest and shoulder. This was undoubtedly the beginning of secondary portal invasion, which soon led to effusion into the pleural cavity and pus expectoration. He was sent home on the 2nd of October, and died some weeks later.

Case V. — Mrs. O. T., aged 29, farmer's wife, Lunenberg, Ont., came under observation March 7th, 1903, with a swelling extending from the pubis outwards above Poupart's ligament. Her illness had begun two months previously with pain in the left lower quadrant of the abdomen, frequency of micturition and other acute bladder symptoms. Two weeks before admission, the mass above described was first noticed and two days before admission, after very urgent bladder symptoms, she passed a large quantity of pus with the urine; after which the mass was noticeably diminished in size. On the 16th of March the abcess was opened, and a large quantity of pus evacuated, which contained actinomyces, but was otherwise sterile. The cavity was packed with iodoform gauze and iodide of potassium given internally, and the patient made a rapid recovery, and was discharged on the 26th of April.

A letter received from her physician on the 15th of September, 1904, a year and a half after operation, states that she has remained perfectly well ever since.

Case VI.—H. F., aged 24, lawyer, St. John, N. B., was a patient of Dr. Garrow's, seen in consultation July, 1904. In this case the first signs were noticed in the month of January, 1904. The fungus was discovered after a good deal of trouble.

Case VII.—Miss E. C., aged 22, farmer's daughter, Morrisburg, Ont., came under observation October 30th, 1904, with an indurated suppurating mass in the right cheek near the angle of the jaw. The first symptoms had begun in the mouth about six weeks previously. Actinomyces were discovered in the pus and tissue. The whole mass was removed with an entirely satisfactory result.

Case VIII.—Miss L. H., aged 25, nurse, Toronto, Ont., came under observation in September, 1904, with an indurated superficial suppurating mass in the left cheek, opposite the molar teeth. The first symptoms had begun in December, 1903, in the gum, external to the carious molar tooth in the lower jaw. Actinomyces were discovered, and the mass removed with satisfactory results.

Case IX.—Mrs. McM., aged 30, Morrisburg, Ont., came under observation November 23rd, 1904, with an indurated, superficial, suppurating

mass, which had not been opened, in the left cheek, opposite the lower molar teeth. The first sign had been noticed in June, 1904, as a swelling between a carious wisdom tooth and the cheek. The appearance of the mass, and the history were so suggestive that the mass was removed without any preliminary examination. Actinomyces in the most typical form were discovered easily. The patient made a good recovery.

In these last four cases the history and appearances were most typical of actinomycotic mouth infection—a swelling beginning in the gum in the neighbourhood of a carious tooth, gradually and quietly receding from the gum until no signs remained in the mouth, and infiltrating the tissues in the cheek until a hard mass was formed, with a little seropus beneath the thinned and reddened skin externally. The facility with which the actinomyces were discovered in the last case, which had not been opened, in contrast to the difficulty with which they were found in the other cases, where sinuses had existed, is also very instructive. Mouth infections seem to be the least serious forms of infection.

I am indebted to Dr. Keenan for the demonstration of the parasite in the last eight cases, in most of which the discovery was not made without much patient and persevering investigation.

In the three following cases I am convinced of the accuracy of the clinical diagnosis, which is, however, unsupported by the demonstration of the fungus:—

Case I.—B. L., aged 36, farmer, Kemptville, Ont, admitted to the Royal Victoria Hospital on November 15, 1904, with a large, irregular, indurated ulceration of the skin of the right palm, covering an area of about one and a half by two inches superficially, which had begun as a small pimple about a year previously, and had been treated by incision, curettage and caustics several times. The ulcerated mass was excised, and although Dr. Keenan could not find any clue to its origin, I have no doubt that it was actinomycosis.

Case II.—This is the only case of acute actinomycosis which has come directly under my notice. A. McD., aged about 35, farmer, Glengarry, Ont., was sent to me with a large painless swelling below the angle of the jaw, which looked, to me, like a sarcoma or a secondary carcinoma. The history was, however, that about five days previously, whilst working about a threshing machine, a barley awn had stuck in the left side or the pharynx or tonsil, and he was not sure that it had all been removed. The swelling of the neck began next day, and had continued to increase. He would not remain in Montreal, and I am indebted to Dr. McLennan, of Alexandria, Ont., for the subsequent history. Three days after I saw him, the swelling had increased and had caused œdema

of the pharynx, and an incision was made along the posterior border of the sterno-mastoid muscle. There was much oozing of blood, but there was no pus. The wound was packed with gauze, and bubbles of air escaped from it later. Thirty-six hours later tracheotomy was required. He recovered from the œdema of the glottis, but died suddenly of hæmorrhage one week after the tracheotomy operation. During this time a thin, blood-stained, shreddy, offensive sero-pus escaped from the wound, and another collection had formed just above the clavicle. There was no microscopical examination of the discharges nor of the affected tissues in this case, and I make the diagnosis from the manner of the infection, the general clinical picture and the mode of termination; in all of which this case corresponds with a number of cases reported by continental observers.

Case III.—M. G. S., aged about 40, Keysville, N.Y., was first admitted to my service in the General Hospital about 1888 or 1889 with swelling of the neck and sinuses from the jaws to below the clavicles, down over the upper part of the sternum. After much operative treatment for three or four years, I gave him large doses of iodide of potassium, and he recovered promptly and completely. He again came under my notice in the Royal Victoria Hospital in 1900 with cirrhosis of the liver, from which he has since died. There was no microscopical examination in this case, and my diagnosis is based upon the characters of the lesion and the appearance of the neck, which was exactly like some of the plates which we now see illustrating actinomycosis of the neck in the works of continental surgeons. I do not think that the cirrhosis of the liver had anything to do with the actinomycosis.

It is noteworthy that all of these twelve cases originated in country districts within a radius of 100 miles of Montreal, that from one small district on the St. Lawrence River five cases have come under observation within the last year and a half, and that the one acute case and the three cases of intestinal origin were all fatal; while the chronic superficial lesions were never dangerous to life. Cases 3 and 4 show the importance of investigating carefully all chronic and atypical lesions of the appendix and of keeping actinomycosis in mind as one of the possibilities.

In conclusion, it seems to me that the importance of this subject lies not alone in the comparative frequency of the disease, its wide distribution and serious character, and its amenability to suitable treatment, but also in the fact that the knowledge of this one disease, definitely due to a vegetable fungus, may be but a step towards the discovery of the essential cause of other more important and at present more serious diseases. It seems scarcely too great a flight of the imagination to conceive of some similar fungus being the causative agent in cancer and

sarcoma; perhaps even the same fungus or a fungus of the same genus may be the active agent in producing carcinoma by its action upon the tissues of the epithelial type and sarcoma by its action on those of the connective tissue type?

Certain Points in Connexion with the Development of our Knowledge of Actinomycosis and its Causation.

J. G. Adami, M.D.

I had hoped on this occasion that Dr. Keenan[1] would have given us a resumé of his own bacteriological studies upon actinomycosis instead of merely dealing with the generalities of the subject. To him has been due the positive bacteriological, as distinguished from the earlier clinical, diagnosis of the majority of the cases described this evening by Dr. Bell, and, in his studies, he has accumulated a considerable number of data regarding the morphology and mode of growth of the forms from these various cases. More particularly, I had hoped that we should have heard from him his opinions as to whether we are dealing with one or several forms of the Ray fungus producing disturbances in man. I trust that, on some other occasion, he will deal more fully with these matters.

It struck me that this evening it might be serviceable to say some few words regarding the development of our knowledge of this subject of actinomycosis. It has, indeed, rather an interesting history, carefully compiled by Crookshank in the third edition of his Bacteriology. While it is usual to date the first positive recognition of the disease to Bollinger's observations in 1876, the history goes back to as long ago as 1845, when Von Langenbeck, of Kiel, noted the characteristic little grains, which now we know to be those of the Ray fungus, in pus from a case of caries of the vertebra in man. Thus, as a matter of fact, it was in man, in whom the disease is more rare, and not in cattle that the first observations were made. Langenbeck, however, while he made drawings of these peculiar bodies, never published them. In fact, only in 1878 were Von Langenbeck's drawings given to the world by Israel. The first recorded observations were also from a case in man, and here a great pathologist comes in, no less a man than Louis, who gave to Lebert some curious gelatinous pus to examine which he had obtained from an abscess in the thoracic wall in a man presenting somewhat obscure pulmonary disturbances, which M. Louis thought might be cancerous. Lebert gave a very full description of the little spherical bodies of greenish yellow colour, and about the size of the head of a pin, with

[1] See page 105.

peripheral wedge-shaped corpuscles, which he obtained from this pus. Robin also gave very accurate descriptions. In cattle, the first observations upon the organism are said to be those by Perroncito in Italy in 1863, published in 1875. Another Italian, Rivolta, in 1868, in a paper upon a "sarcomatous" tumour of the jaw of an ox, described the characteristic bodies. He was followed by Hahn, of Munich, in 1870, and Hahn was the first to make the suggestion that these were a species of mould.

The fullest study and the one that established the existence of this condition of actinomycosis, showing that it was not sarcomatous or tuberculous, or simple chronic inflammation, was that of Bollinger, of Munich. He gave a most full study of the condition, described the nodules or tubercles; described, further, the organisms within these nodules, and maintained that they were true fungi and the cause of the condition. He found that the disease was very common among cattle of some parts of North Germany—in some cases as many as fifty per cent. of the animals being affected. He was unable to gain cultures, as also to convey the disease by inoculation. Only in 1885 did Johne and Ponfick independently succeed in communicating the disease to other animals, and Ponfick it was who demonstrated that the disease in man was identical in its characters with the disease in cattle.

Up to this point the attempt to make cultures had failed. Bostroem in 1888, in his remarkably full study upon the disease, was the first to cultivate the Ray fungus. This he did from five cases in animals and from one in man. Bostroem was also the first to throw doubts upon the relationship of the actinomyces to the hyphomycetes or mould fungi. For myself, I have never quite recognized the force of Bostroem's argument. It is true that the filaments are very much smaller than those seen in the moulds we are most familiar with, true also that there are no highly developed aerial fructifications or conidia, and, certainly, it is characteristic of the filaments of the Ray fungus that, while branching, as do the true moulds, later the threads divide up into rod-like sections, and these, again, may give rise to or separate up into coccoid little bodies. There is, indeed, in these segments a striking resemblance to bacilli and cocci, and the appearances closely resemble those described by Cohn in the Streptothrix Fœrsteri. But, because Cohn includes this streptothrix among the higher bacteria, that does not, of necessity, make it such. The very characteristic true branching of the Ray fungus, the formation of an equally characteristic felted mycelium when grown outside the body and within the tissues, the general appearance of the cultures, all strongly recall the true moulds, while the break-

ing up into segments and even into coccus-like bodies is paralleled by many of the mucors among the moulds, though I am inclined to think that an even closer resemblance is to be seen in the sexual fructifications of forms like penicillium, where the terminal filaments branch and break off into a series of round spores. I am inclined, that is, to regard these coccoid bodies as conidia or as being of the nature of spores. This view, I know, is controverted by Lehmann and others. It is interesting to note that, when the organism grows in the tissues, while the majority of the peripheral filaments become thickened and club-like—presumably as a reaction and protection against the action of the body cells and humours—some filaments are often to be seen passing between the clubs into the tissues, and these are peculiarly apt to show the coccoid metamorphosis. We know that, as a general rule, spore-bearing organisms, when placed under unfavourable conditions, are peculiarly apt to pass from mere vegetative existence to spore formation. It is just under these conditions above mentioned that we should be prepared to find spore formation.

This question of the exact relationship of the Ray fungus is the subject of active debate at the present moment, and here, perhaps, I may say that the view I would take is that actinomycetes or Ray fungus constitute an intermediate form between the bacteria and hyphomycetes proper. We have, it seems to me, a series of forms starting from definite bacilli, like, for example, B. typhosus, which show no signs of branching, through forms like the B. diphtheriæ and B. tuberculosis, which under certain conditions exhibit undoubted branching (Dr. A. G. Nicholls recently exhibited before the Lister Club certain tubercle bacilli grown in Courmont's media, in which this branching was most extensive), up to the Ray fungi in which branching and the formation of mycelium are very prominent, but there are little or no signs of aerial hyphæ; so up to the lower hyphomycetes, in which there are branching and formation of aerial hyphæ with asexual fructifications, and so on to the higher hyphomycetes or moulds, in which, in addition to all these, we obtain definite indications of sexual reproduction. It is true that nowadays this term hyphomycete is going out of use. What in the old days we termed hyphomycetes are now largely separated off into separate families—ascomycetes, basidiomycetes, zygomycetes, and so on. Nevertheless the name is still useful as indicating all those mould-like organisms characterized by the formation of a dense, felted mycelium, composed of hyphæ or branched filaments.

And here a word may be said with regard to the nomenclature of the Ray fungus. During the last year, more particularly in America, following certain European observers, it has become fashionable to speak

of the Ray fungus, not as Actinomyces, but as Streptothrix, or, rather, to speak of a group of streptothrices of which the Actinomyces hominis is one member. Is this permissible? Undoubtedly the form described by Cohn long years ago as the Streptothrix Fœrsteri conformed very closely in its morphology with the actinomyces, and, if he had been the first to employ this name, then we should be justified in going back to the early terminology, nay, should be forced to do so; and there would be a certain amount of convenience in so doing. There are, however, certain laws regarding scientific nomenclature which, by international agreement, are accepted by all educated people, or, more correctly, which have been so accepted by the different international congresses of members of the different branches of descriptive science; laws which we cannot neglect to recognize unless, frankly, we acknowledge that medicine is not a science, and that nothing in connexion with medicine is scientific. Among these laws I may mention the following:—

1. That every animal and every plant—and also every fission fungus—belongs to a species, every species to a genus, and every genus to a family.

2. Every living organism should have two Latin names; the first a substantive designating the genus to which the organism belongs; the second indicating the variety or species and being an adjective qualifying the former, or, if not an adjective, the genitive of a substantive. We speak thus of B. typhosus or B. anthracis with perfect accuracy. To use more than one adjective in the name of a species is incorrect, unless the two words indicate a single idea. It is thus proper to speak of B. acidi lactici.

3. If it is found that some species has been named previously by an earlier observer in strict accordance with the rules of scientific nomenclature, then the later name has to give place to the first even if the second be the more appropriate.

4. If a name be given to any definite species is later found to have been previously employed to designate another form, then it has to be given up, and whoever first finds the error is justified in renaming the species.

There are many other rules, but these most affect us in the present case. So soon as it was found that the form termed Actinomyces hominis by Bollinger had the generic characters of the form previously described as a streptothrix by Cohn, then the name actinomyces had to be given up, and it seemed justifiable to speak of this as the Streptothrix hominis. But as soon as Lehmann pointed out[1] that thirty years

[1] Lehmann and Neumann, Atlas and Principles of Bacteriology, Second German Edition, translated by Weaver, Philadelphia, Vol. II., 1901, p. 121.

before Cohn, Corda had given this name streptothrix to a totally different fungus, then it was no longer permissible to use the term streptothrix, and Lehmann was justified in renaming this Actinomyces, and we find ourselves very largely in sympathy with Lehmann in his making a group of the Actinomycetes, to include all those forms of higher bacteria in which branching has been observed, including the diphtheria, glanders and tubercle bacilli and allied forms, and retaining the generic term of actinomyces for the genus which includes the Actinomyces hominis. As already stated, I regard this as a group intermediate between the bacteria proper and the lower moulds.

Now, it may be asked, is there only one specific actinomyces which is the pathogenic organism in both man and cattle? It seems to me that we have definite indications that we have to deal, not with one organism and one disease common to the two species of animals, but that probably in each species we encounter it may be several species or varieties of the Ray fungus. This is still a matter of debate, but one has, I think, only to study the illustrations given by different authorities to recognize that some at least have dealt with wholly distinct forms. In some cases the organism is small, with simple clubs; in others, large with branching clubs. This, indeed, has been explained as due very largely to the reactive powers of the tissues, the formation of clubs being the reaction against the body juices, and, as a matter of fact, in very acute actinomycosis, where there is little reaction apparently on the part of the organism, the clubs may be wholly wanting.

In some cases it seems to be impossible to gain growths in the ordinary media; in others, growth is fairly free in the presence of air, while certain observers have stated that they have obtained most successful growths in the absence of oxygen. Here again there seems to come in a complication, namely, that a large proportion of the granules obtained in pus are already exhausted and dead, the microbe having been destroyed. Thus to fail to get growths does not necessarily mean that we are dealing with different species. One form, the A. Israeli of Lehmann and Neumann, obtained from the human disease, undoubtedly grows best under anaërobic conditions. But, if this is not conclusive, I certainly have noted—herein confirming what Dr. Keenan has pointed out to me—that in some of our Montreal cases the mycelium has been formed of very fine, and in others of relatively coarse threads. This must indicate different species. And, in man, I may remind you, there is one group of species which clearly are distinct, namely, those setting up the chronic localized disease, chiefly of the hands and feet, known as Madura Foot or Mycetoma, the organism from which has been cultivated

by Vincent in Algeria and by Wright in Boston. You will remember that Dr. Kirkpatrick and I,[1] in 1894, brought a case of this disease before this Society, and demonstrated the Ray fungus obtained from the fistulæ, this being the first positive demonstration of the disease with its associated peculiar fungus on this continent, although certain museums in Washington and elsewhere were found later by us to contain specimens of the disease which had not definitely been recognized. Since our communication, other cases have been recognized, both in Chicago and Boston. The condition, in short, while common in India, does occur in other parts of the world.

Here, in Canada, actinomycosis or lumpy-jaw, in certain areas at least, is very far from being unknown among our cattle, and, while one knew that the disease is not directly conveyed from cattle to man, it was not a matter of surprise for us to find, in 1900, that it occurred in man also (just as some years previously it had been found by Dr. Murphy in the United States), though we were scarcely prepared to find that, as Dr. Bell's remarkable series of cases brought forward this evening has shown us, the disease is so frequent. It appears to be the old story, that we have only to be alert and prepared in order to encounter morbid conditions which otherwise would pass unnoticed.

The Clinical Aspect of Actinomycosis.

W. W. Chipman, M.D.

Some two years ago, before the Reporting Club of McGill Medical Faculty, I gave a short résumé of our knowledge of Actinomycosis. When the present discussion was mooted, your Secretary must have remembered this occasion, for he asked me to repeat here before this Society my previous contribution. This I declined to do, knowing that the present discussion would proceed along lines much more extensive, and that the pathology of the disease would be presented by others in a much more able and complete way. I gladly agreed, however, to present the clinical portion of my paper, and this I now proceed to do.

The occasion, some two years ago, of my special interest in actinomycosis was that shortly before my old chief, Dr. Berry Hart, of Edinburgh, had published in the *Empire Journal* "A Case of Actinomycosis of the Ovary and Pelvic Connective Tissue," while at that very time Dr. Gardner, my new chief, if I may so call him, had under his care, at the Royal Victoria Hospital, an obscure abdomino-pelvic lesion, which

[1] This Journal, Vol. XXIII, 1894, p. 68, and Vol. XXIV, 1896, p. 485.

gradually disclosed itself as an instance of this disease. It was the knowledge of these two cases occurring almost together that attracted my special attention to the subject. Moreover, actinomycosis, as it affects the female pelvic viscera, is an extremely rare condition, so rare that Pozzi speaks of it as an anatomical curiosity; and the occurrence of these two cases almost together, even if proverbial, was significant and noteworthy.

I have subsequently had an opportunity of discussing his case with Dr. Berry Hart, and I now give you the clinical history of these two cases; you will pardon me if they are somewhat detailed.

Case I.—That of Dr. Berry Hart. Mrs. H., aged 49, married and nulliparous, was admitted to Ward 36 of the Royal Infirmary of Edinburgh, August 23rd, 1901. She complained of a swelling in the left iliac region and weakness. Her illness began in June with down-bearing pain in the bowels and a gradual onset of weakness. This weakness increased, and she developed fever and night sweats, and rapidly lost flesh. Her previous history had been good. On her admission to hospital she was found to be a thin, pale woman; in the left iliac region was an ill-formed resistance; she had a temperature in the evening of 101-102°. The vaginal examination revealed through the left lateral fornix a swelling, which was thought to be tubal, and about this a firm, flat effusion occupying the left lateral and posterior fornices. In September the patient developed Phlegmasia alba of the left leg. There was a good deal of pain, and the swelling in the left iliac region increased in size, and the connexion of this swelling with the mass in the pelvis could now be made out. Operation was not undertaken, as Dr. Hart inclined to the opinion that the condition was one of incurable malignant disease.

In October the temperature became higher, and rigours occurred. There was some œdema in the groin, and the swelling in the left iliac region increased. Thinking that the case might be one of tubercular mischief going on to abscess formation, in November, Dr. Hart opened the abdomen. He could make out nothing distinctly; the pelvic organs were matted together and indistinguishable so that the abdomen was merely closed. On November 8th the woman died.

The autopsy revealed in the left side of the pelvis, and reaching almost up to the kidney, placed retroperitoneally, a large amount of blood and pus. The bladder contained a pint of recent blood, the rectum was eroded and perforated, and there was septic thrombosis in the pelvic veins. The left ovary was flabby, soft and apparently suppurative. There was a double-sided pleurisy. Further examination revealed in

the ovary the presence of the Ray fungus, and the diagnosis of the case was at once made clear.

In this case implication of the left ovary and tube was probably secondary to the lesion in the rectum and cellular tissue. Speaking of this case, Dr. Hart says: "I stand in the white sheet of repentance, for had I attained to a diagnosis of actinomycosis early in the case, who knows what drainage and iodide of potash might have done?"

Case II. Mrs. S., aged 35, Morrisburg, Ont., a patient of Dr. Charles Hickey's, who sent her to Dr. J. J. Ross of this city, who in turn placed her under the care of Dr. Gardner in the Royal Victoria Hospital. The patient entered this institution on January 6th, 1903, and her history was this:—A year before, namely, in the spring of 1902, she developed very severe backache, with distress in the right groin. Shortly after, a small abscess pointed in the right iliac region directly over the vermiform appendix. This was opened in June, and a teacupful of pus evacuated. The abscess cavity refilled, and in September was reopened. Through the autumn the patient's condition was not satisfactory. She suffered a good deal from more or less constant pain in her back and right side; the sinus never closed and discharged continuously.

On her admission to the hospital, the patient was found to be thin and anæmic. She complained of a more or less constant pain in her right side and in the hypogastrium. There was little fever, at the most a rise of 2°, and the pulse was quiet. Her previous history and general condition were good, and she belonged to a healthy family.

Examination of the abdomen revealed a short sinus in the right iliac region with pouting edges, from which a thick yellow pus, small in quantity, exuded. There was resistance in this right iliac region, which was ill-defined; and there was some sensitiveness over this and the hypochondriac regions. Vaginal examination revealed a large, firm uterus, partially retroverted and somewhat fixed. Between the uterus and the ill-defined mass in the right iliac region a distinct sulcus could be felt. The right ovary and tube could not be defined; the left ovary and tube were slightly enlarged. On January 9th Dr. Gardner operated, curetting the uterus and the sinus. The depth of this sinus was barely two inches, and the amount removed from its cavity was inconsiderable; the uterine scrapings showed interstitial endometritis. On the 13th of January the patient felt very miserable and looked ill. Her evening temperature rose to 101, and she complained bitterly of pain in the abdomen, especially now on the left side, and there was marked abdominal tenderness, all the signs and symptoms of a pelvic peritonitis. In a few days the symptoms somewhat abated, but the patient still com-

plained of this pain in the left inguinal and iliac regions, and the tenderness in these regions persisted. On the 23rd of January, Dr. Gardner opened the abdomen. Some free straw-coloured fluid was found in the peritoneal cavity, and the omentum was drawn down and adherent to the mass in the right iliac region. This mass was made up of omentum and bowel, and was found to have no connexion with the pelvic viscera, the right ovary and tube lying healthy below it. The left ovary was the size of an orange, and extruded from it, lying free in the pouch of Douglas was a yellow gelatinous substance; the tube was swollen and œdematous. The parietal peritoneum of the anterior abdominal wall was thickened, this thickness taking the shape of a wedge, with its base lying to the right side and close to the inflammatory deposit about the veriform appendix, and its apex reaching across to the left side of the abdomen. The left ovary and tube were removed, and the adhesions on the right side were partially separated, but were left intact close about the track of the sinus.

The patient made a good recovery from the operation, and the urgent symptoms never recurred. On January 30th she is reported as having little pain and being very comfortable. On February 22nd there was a slight rise of temperature, with pain in the region of the abdominal sinus and a cessation of discharge from this sinus. A probe was introduced, and a moderate amount of fœtid, thick discharge containing yellow sulphur-like granules escaped. These, on being examined, revealed the characteristic filaments and clubs of the Ray fungus, and decided the nature of the lesion. The patient was promptly put on large doses of iodide of potash, 30 grains three times a day, and her condition steadily improved. On March 8th, however, she had a chill, some nausea and vomiting and severe pain in the region of the sinus; and there gradually developed in the close vicinity of this sinus a tender, red, fluctuating area—the pointing of a fresh abscess. On March 20th ether was again given, and a thorough curettage of the sinus carried out. This time a large amount of solid yellow substance of a gritty consistence was removed. From this time the patient's condition steadily improved, and the treatment consisted merely of thorough dressing of the sinus throughout its whole length and in the exhibition of iodide of potash.

She left the hospital finally on the 25th of April, having gained four pounds in the last ten days of her stay. The sinus remained open until December, 1903, when it finally closed. Dr. Ross has this week heard from the patient; she has remained for a year perfectly well, the sinus is healed, and the patient has gained 60 lbs. in weight.

This case, gentlemen, was one of actinomycosis of the vermiform appendix, and with some slight secondary involvement of the pelvis. Microscopical sections made of the thickening of the parietal peritoneum of the anterior abdominal wall showed a chronic inflammatory process—numerous giant cells scattered throughout areas of round-celled infiltration; sections of the left broad ligament revealed in lesser degree a similar process. The case at first was thought to be tuberculous, but careful and repeated examinations failed to reveal the presence of the tubercle bacillus. It was this hunt after the tubercle bacillus that rather led us away from a thorough sectioning and examination of the parts removed.

Comparison of the Two Cases.—Both these cases are of actinomycosis, and yet how different are their clinical courses. Case I. ran an acute course from June till November, while Case II. led a chronic history of some two and a half years. In one there was high fever, rigors, sweating and rapid emaciation; in the other, the fever was slight, there were no rigors, while the general health was comparatively little impaired. In Case I. there were metastases, and none in Case II. Case I. ran the usual course of typical actinomycosis; Case II. is atypical in nearly every particular, and apart from the finding of the Ray fungus in the discharge from the abdominal sinus, presents few features of visceral actinomycosis. Both these cases were secondary, the primary focus of the organism being in each case the intestinal canal.

Cases of primary involvement of the female pelvic viscera are, and must be, extremely rare. So far as I know, there is only one case on record, a case reported in 1893 by the late Sir Thomas Grainger Stewart and Dr. Robert Muir. The report of this case is found in the Edinburgh Hospital Reports, Vol. I., and I remember when a student in medicine at Edinburgh of hearing this case discussed. This case died, and at autopsy no intestinal lesion was revealed; the uterus ovaries and tubes were involved in a chronic suppurative process and the Ray fungus was therein demonstrated. The vagina was implicated, a long, suppurating sinus led to it from the left ovary, but the whole length of the intestinal canal was healthy. The infection here had evidently been introduced through the vagina, and, so far as I know, it is the only case in literature where such a direct infection has occurred.

Considering the nature of the organism, and also the character of the lesions which it produces, primary infection of the internal generative organs must always be extremely rare. The lesions when they occur

will nearly always be secondary to a previous involvement of the intestinal tract.

I wish to thank Dr. Gardner for his kindness in permitting me to present this case this evening; to thank Dr. Goodall for his patience and skill in prosecuting the pathological research, and Dr. J. J. Ross for his kindness in following this case after her departure from the hospital.

Dr. GARDNER.—With reference to the case reported by Dr. Chipman which came under my care in the hospital, I also stand in the white sheet of repentance, as the suspicion and discovery of the disease is due to Dr. Goodall, who, in the course of his dressing of the case, found these little sulphur-like granules and set to work to make the necessary examinations. The satisfactory result of the case is, of course, one for congratulation, and the extraordinary tolerance of this patient for enormous doses of potassium iodide, over several months together, seems to have been the most important element in her favour. I saw this patient last May or June, and found the sinus closed, and that practically she was entirely free from all symptoms, having also gained in weight to a very great extent. This is the first case in my considerable experience in which, looking back, a possibility of actinomycosis had existed. This case was puzzling somewhat from the first, until the examination by Dr. Goodall aroused our suspicions, which suspicions were confirmed as to its true nature. Certainly, actinomycosis of the genital organs must be extremely rare, at all events primarily so.

ACTINOMYCOSIS FROM THE MEDICAL POINT OF VIEW.

W. F. HAMILTON, M.D.

While actinomycosis, as it is found in the human subject, is for the most part a surgical disease, yet there are certain cases presenting features bringing such patients more or less directly under the physician's notice. Among sixty cases reported by Prof. v. Baracz, only three possessed pulmonary complications, while in the group presented by Dr. Bell this evening but two show thoracic signs and symptoms. One of these Dr. Bell kindly asked me to see, and the observations made upon that patient afford me the only apology for my appearing before you to present the medical aspect of the disease.

Case No. 4 of Dr. Bell's Series.—As we have seen, the clinical features of the case were at first abdominal, mainly limited to the right upper and lower quadrants and leading to the diagnosis of appendicitis. After operation for this condition, the patient improved somewhat, and left

the hospital, but returned within six months of the date of the onset of his illness with an aggravation of all his symptoms—pain and tenderness in the abdomen and lower thorax on the right side, pain in the right shoulder with jaundice. The pain was most severe over the hepatic area. The respiratory rate was accelerated, and deep breathing increased the pain. At this time there was no cough. On examination of the chest one found signs of fluid in the right pleura—dulness with diminished breath sounds. At first there were no adventitious sounds. Shortly there developed numerous crepitations over the region of the dulness, and ægophony was also heard over a limited area. Œdema developed in the skin over the lower part of the chest on the right. Before the pleura was aspirated the patient expectorated a considerable quantity of purulent matter, containing the characteristic fungus.

Aspiration was attempted twice with negative results in the 8th and 10th spaces; the third aspiration succeeded. The puncture was made in the 9th interspace near the spine, and nearly a pint of apparently bile-stained dark-coloured serum was removed. The fourth aspiration in the 8th space, more towards the axilla, was attended with negative results.

The discharge of sputum in variable quantities continued for about ten days, when it was decided to aspirate again. The needle entered the 8th space just internal to the angle of the scapula, and twenty ounces of thick yellow pus was withdrawn. As the course of the case was unsatisfactory, notwithstanding the free use of potassium iodide, it was decided to resect a portion of one of the ribs, and this was promptly done under local anæsthesia. The subsequent events in this case have been already described by Dr. Bell.

Remarks.—1. From the history afforded us in this instance, we plainly had to deal with a case of actinomycosis, secondary in pleura and lung, spreading upward through the diaphragm from an abdominal focus.

2. When the patient was first seen, the history of actinomycosis in the pus from the abdominal wound strongly suggested the character of the pleural invasion, and the tenderness over the hepatic region with jaundice plainly supported that view.

3. The development of cough, and the sudden copious discharge of purulent matter bearing the characteristic fungus, was conclusive evidence of a pleural and pulmonary invasion in this case.

4. Cases of pulmonary actinomycosis are unfortunately not always so clear as this one. They usually pass as cases of pleurisy with

effusion or as cases of empyema. In some instances pneumonia of a chronic type or tuberculosis may be suspected. One can plainly see, too, how necessary in the chronic wasting cases it is to exclude malignant disease.

5. While pulmonary actinomycosis is comparatively rare, as we have already shown, undoubted cases with the disease primary in the lungs or pleura are still more rare. West records about thirty such cases. Kashiwamura[1] has recently reported upon four cases which, from clinical and anatomical evidence, he considers are primary in the lung. In two of these the evidence is clear, while in the other cases there is some room for doubt.

6. The pericardium and endocardium have been invaded in some few reported cases. A case reported by Fütterer,[2] of Chicago, illustrates an endocardial involvement.

7. In 1889, Delépine[3] presented a comprehensive and anatomical study of actinomycosis in the human subject. His case developed Jacksonian epilepsy, followed by right hemiparesis, and at autopsy the left motor area was the seat of abscess formation. An illustration of cerebral metastases has already been afforded in Dr. Bell's paper.

8. While the great majority of patients with actinomycosis must be treated surgically, there remain a few whose condition promises no amelioration with surgical measures. Then, of course, there is but little hope from any method of treatment. Drug treatment has its advocates; potassium iodide has been tried with good results in some cases, and doubtless it should be given even when surgical treatment is adopted. It is recommended to be given in large doses and intermittently. The X-Ray treatment, so generally adopted for hopeless malignant conditions has been tried. Yet it is far from satisfactory. The latest method advocated by Prof. v. Baracz is what may be termed blood antisepsis—by means of the intravenous injection of colloid silver,—collargol.

The Bacteriology of Actinomycosis.

A. G. Nicholls, M.D.

The subject of actinomycosis has a good deal of interest for me, inasmuch as I was somewhat directly concerned in the diagnosis and study of the first two cases reported by Dr. Bell to-night, which, I believe, were the first instances of this disease recognized in the human sub-

[1] Archiv. of Path. Anat., Bk. 171, Seché 257.
[1] Archiv. of Path. Anat., Bk. 171, Seché 278.
[3] Trans. Path. Soc., Lond., 1889.

ject in Canada. Dr. Bell, I think, is to be congratulated on getting together such an admirable series of examples of what is undoubtedly an uncommon, or, what is perhaps more correct, an uncommonly recognized affection, for I know of no one who has had so many cases to report at one time. His series serves to corroborate the already well-known fact that actinomycosis is met with most frequently in connexion with the alimentary tract and its associated structures. The most extensive observations with which I am acquainted are those of Rùräh, in the Annals of Surgery, Vol. XXX., 1899, Nos. 4, 5 and 6, who has collected 1,094 cases of actinomycosis from different parts of the world. In 50 per cent. of these the lesions affected the alimentary tract, particularly the buccal cavity, but also the intestines, notably in the region of the appendix and cæcum; in 20 per cent. the lungs were involved, and in 15 per cent., the skin. As Dr. Bell has pointed out, actinomycosis belongs to a group of diseases known as the infective granulomata. Among these, which have much in common, may be mentioned, farcin du bœuf, glanders, tertiary syphilis, leprosy, tuberculosis, actinomycosis, mycetoma pedis, and mycosis aspergillina. All produce lesions that, histologically speaking, are identical, any differences being merely of minor import, such as the relative amount of destruction and of connective-tissue hyperplasia. When we consider the micro-organisms at work in these diseases, we find what appears at first sight to be certain clear points of differentiation. Thus, in glanders, leprosy, and tuberculosis, we have a frank bacillus, in farcin du bœuf, a branched, thread-like form, in actinomycosis, a rosette-shaped organism, and in the melanoid variety of mycetoma, and in mycosis aspergillina, a much higher type, a hyphomyces. A more careful study of the life-history of these various organisms tends, however, to obscure these points of distinction. As an illustration of this, I may cite the very remarkable aberrations from the classical type which so well known a germ as the bacillus of tuberculosis may evince under certain conditions. I have at present under observation a certain strain of this bacillus, which grows freely in a peptone solution, and can readily be studied from day to day. During the first twenty-four to forty-eight hours all that can be seen is a number of minute coccoid bodies, which undoubtedly are young forms of the bacillus. I have occasionally seen such in sputum stained by Gabbet's method. Later, diplococcoids and short bacilli, and, later still, long and branching forms may be observed, many of them being clubbed at the ends. This clubbing is common to a number of bacteria, among which may be mentioned the diphtheria bacillus, so that some good writers recognize a class spoken of as the corynebacteriæ. I have found, too, when the higher moulds, such as the

aspergilli, which are provided with mycelium, hyphæ, and sporangia, are injected into the bloodvessels of experimental animals, they assume a simpler form, namely, large and small coccoids, and polymorphous bacilli. In the case of the actinomycosis clubbing is not always present. Thus it is seen how difficult it is to classify these various organisms. Just where the actinomyces comes in is still unsettled. The tendency is to class it with the other long branching forms as a streptothrix.

With regard to the morbid anatomy of actinomycosis, I have had the opportunity of seeing four or five cases, involving the viscera, and the lesions were striking and characteristic. In the liver, for instance, the central portion of the organ is occupied by a large mass, which at first sight looks not unlike an abscess full of thick, gummy, yellowish pus. When the pus is washed away, the cavity is found to be traversed by innumerable dense, fibrous bands, reminding one more than anything else of a loofah sponge. The specimen brought here by Dr. Abbott from the McGill Museum shows this peculiarity very well. In the interstices is the pus. In the case of the lungs and kidneys the lesions look like ordinary pyæmic abscesses surrounded by an inflammatory zone.

Some debate has arisen as to the question whether the actinomyces is competent to produce pus. In general terms, it may be said that the organism tends to produce a lesion characterized by great proliferation of connective-tissue, leading to the formation of tumour-like masses, In the case of lesions so situated that there is a communication with the external air or a hollow viscus, secondary infection is common, and therefore pus production.

With regard to the differential diagnosis of actinomycosis, it may be stated that the most likely disease with which it may be confused is tuberculosis, which, of course, is the most common form of infective granuloma. It is not always easy to form a correct opinion, but several considerations will help. In the first place, the lesion of actinomycosis is characterized by the formation of a much greater amount of connective-tissue than is the case in tuberculosis, although this is not nearly so extreme as in the bovine disease. Tuberculosis usually spreads by means of the lymphatics to the glands, or by the arterial system. Actinomycosis generally forms metastases through the veins, and tends to remain strictly localized for a long time. A further important point is that in actinomycosis fistulæ with scanty discharge are rather common. To cite a particular case by way of illustration, where the diagnosis would be difficult—In chronic pleurisy or consolidation of the lung with softening, such as we would get in any granulomatous affection, should a sinus form in the thoracic wall, this would be proof

positive in favour of actinomycosis, for in tuberculosis such a thing does not occur.

The final demonstration of the nature of any given case would be made by the discovery of the Ray fungus in the granulation tissue or in the discharge. In the case of sputum or pus we look for the so-called "sulphur grains," which are the fungus itself. It is often necessary to hunt over quite a large amount of material, and even then the grains may not be found. By spreading the pus on a plate of glass and examining it on a black background the process is facilitated. In default of finding the "grains," long threads should be searched for. In tissues the actinomyces are often scanty. In the case I worked at the diagnosis was for a long time obscure, until a great number of sections had been made. The fungi stain by hæmatoxylin, but the best stain is Gram. Owing to the great number of related forms among these fungi, it is advisable, where possible, to make cultures of the organism. Cultures of the actinomyces bovis differ in certain particulars from the others, the most important being the difficulty of growing it in the presence of oxygen. Again, inoculation experiments are of the greatest value. Most of the fungi I have mentioned produce the lesions of pseudo-tuberculosis in the ordinary laboratory animals, while the actinomyces bovis produces no gross disease.

Clinical Bacteriology of Actinomycosis.

E. W. Archibald, M.D.

I can hardly agree with the statement that the disease is a rare one here as compared with other countries. It is rather, in my opinion, that only in recent years have we been on the lookout for it; and I fancy that many surgeons have, time and again, come across obscure conditions, which, undoubtedly, with our fuller knowledge, would have proved to be actinomycotic. That the disease is not infrequent is sufficiently proven by the series of cases reported here by Dr. Bell to-night, drawn, as they are, from a population which is sparse as compared with that of Europe. Indeed, it was a favourite remark of Von Mikulicz at his clinic that the diagnosis of no obscure abdominal condition should be made until the possibility of actinomycosis had been considered.

My own experience with the condition began four years ago in Ponfick's laboratory (Breslau), where I had the opportunity of studying two cases which had come to autopsy. Although interesting in many particulars, they were chiefly so to me as illustrating in a striking way the two modes in which the organism spreads—by contiguity and by the

blood current. In the first case, an abdominal one, the primary lesion was in the cæcum, and it was slight; the metastasis was in the liver, and it was very large. Evidently the transport was by the blood, and, as a matter of fact, I was able in sections to demonstrate the fungus lying in a portal vein. This involvement of the liver in gastro-intestinal cases is fairly frequent; in statistics of 111 cases, Grill found it 22 times. The frequency of spread by contiguity is shown in the fact that of the 111 cases, 84 involved the abdominal wall. On the other hand, transport by the lymphatics is practically unknown; and though, occasionally, the neighbouring lymph glands are swollen, this is plainly a reactionary œdema, comparable to what one finds frequently in the glands draining a cancer of the bowel, and not due to the actinomycosis, which cannot be found in them.

The second case, though doubtless primary in the lung, showed an extensive involvement of the prevertebral mediastinal tissue, having spread very widely indeed by contiguity. Many such cases form sinuses, and are naturally set down under the rubric of tuberculosis.

In Dr. Bell's first case, which came to post-mortem, and in which Dr. Adami made the pathological diagnosis, there was very extensive involvement of both liver and lung by contiguity through the diaphragm; and Dr. Adami kindly allowed me to study the material. There was nothing particularly new in the results—cultures failed to grow, as is frequently the case—but the sections showed one thing in especial, which, though familiar to those who have worked over the ground, might escape such as are yet unacquainted with the pathological side of the disease. I refer to the fact that one may look through a hundred sections and never find the ray fungus as the text-books describe it. The ray appearance is due to a degeneration of the clubbed ends of the mycelial threads where they meet tissue resistance (so it is supposed) at the periphery of the snarl; and this may, and often does, occur very sparsely indeed in the tissue examined. Yet, if these sections be stained with the Gram-Weigert, and examined closely with the care that one uses in looking for tubercle bacilli, the mycelia will, I believe, be found in most instances, running as single threads or in little tangles between the tissue cells. Decolorization, by the way, must be perfect, else cell outlines may be mistaken for mycelial threads. Even under these circumstances, one sometimes is obliged to look through many sections before finding the organism, a circumstance which led Ponfick to speak paradoxically of "actinomycosis without actinomyces."

In Dr. Bell's second case, in September, 1900, I was able to grow the organism from the pus evacuated at one of the operations. The cultural characteristics corresponded most nearly with those of the

Actinomyces bovis first described by Bollinger. It grew not at all at first on the ordinary laboratory media, but yielded a fair growth on a special medium, consisting of blood serum and egg-yolk slightly acidified. It came up best aerobically; in the absence of oxygen it showed very little growth indeed. In spite of transfers on various media, it soon died out. At least seven different actinomyces varieties have now been described as pathogenic for man, varying mainly in their cultural characteristics; and it is evident that there is still much work to be done before we arrive at a proper comprehension of streptothrix disease.

Determination of Species.

C. B. Keenan, M.D.

With regard to the different forms of the so-called actinomyces, we all know that there are a great many forms, and the one question is which are the pathogenic and which the non-pathogenic. Many pathologists claim the disease comes from the air, and have exposed plates with successful cultivation. Howard, investigating glycerinated vaccine points, found that in 50 per cent. he could isolate an actinomycotic growth, but whether this form was proved pathogenic or not I do not know. I only mention this to give an idea of the very wide distribution of this fungus. Actinomycosis has been separated into different classes, and a great many men at present seem to feel that the cultural characteristics by which we separate the different classes are very immature and are not constant, and, since the general appearances are so much alike, it is very difficult to make a classification at present of the actinomyces as found in man. As to whether this can produce pus or not, I have had doubts about this myself, and I was very glad that Dr. Bell, in one of his cases, excised the lesion without previous opening and draining. Here I found the typical granules showing clubs and filaments, and cultures of these showed no other bacteria whatever. This supports the statement that actinomyces of themselves can and do produce pus, although commonly they are associated with other bacteria. With regard to the difficulty in diagnosis, we may not always get the actinomyces in the tissues. On an average, one would have to examine 50 sections to get one section showing the organism, that is in the more chronic forms. In the tissues we do not get clubs, and the reason for that is that these clubs are not a definite body, but practically degenerated material clinging around the end of a filament. The end may swell, and so form a club, but that is not the meaning usually given to the term clubbing, which is a definite mass of material which surrounds or terminates the filament. Finding actinomyces in a specimen has

been rendered comparatively easy for me owing to the method Dr. Adami showed me of mixing with a 10 per cent. solution of caustic potash, when I find that the little pus particles will tend to go to the top while the actinomycotic granules tend to sink very rapidly.

Maude Abbott, B.A., M.D.

Dr. Abbott exhibited the following specimens from the pathological museum of McGill Medical Faculty:—

1. Three specimens of extensive actinomycotic disease of the lower jaw in the cow.— Lumpy jaw.

2. The liver, lung and kidney from a case (No. 1 of his series) under the care of Dr. Bell, who died in the Royal Victoria Hospital.

The liver showed a large circular abscess penetrating the diaphragm into the right lung. The abscess cavity was crossed by numerous fibrous bands, which divided it into small loculi containing pus. The kidney showed one small abscess about the size of a filbert, which presented the same loculated structure with pus in the meshes. The lung was riddled with small circular abscesses from the size of a small pea to a hemp seed.

Dr. Garrow.—In connexion with actinomycosis of the skin, particularly of the face, it is interesting to note that while metastases have been frequently spoken of as following a primary focus, multiple foci have not been referred to, and yet this condition existed in the case I demonstrated, involving both sides of the face and neck within a few months of the onset of the disease.

Dr. McKenzie.—The disease seems to be quite common in Austria. Whilst there I saw a case of primary actinomycosis of the lung which was recognized microscopically.

Dr. Adami.—One practical point I would suggest to those who have cases in which they suspect actinomycosis, that is, where you have a fistula, that some of this pus or even some of the material should be collected, and it can often be cleared by weak caustic potash and smears made from the deposit, and in this way it is possible to find these scattered mycelial threads.

Dr. Bell.—I would like to emphasize the statement which I originally made, that I believe the disease is much more common than any of us suspect, and the reason why one cannot show more cases is that it has not been looked for. I am certain that, looking back over many of the cases where I have failed to demonstrate the cause of the lesion, if I were investigating them to-day I should find many of them due to

the actinomyces. Another reason is that while we must rely for final diagnosis upon the microscope, there must be many cases, especially those with chronic sinuses, in which it is impossible to demonstrate the micro-organism sinuses. Just as we must all recognize cases of tuberculosis, in which only after operation or post mortem are we able to demonstrate the tubercle bacillus, so in actinomycosis. I look upon diagnosis in the three cases which I include in the second series as being just as convincing as if the actinomyces had been microscopically demonstrated, and I believe that if we are alive to the possibilities in diagnosis a great many more cases will be found. Another important fact is the localized areas from which these cases come in groups; five of my cases came from a small district, probably not more than 30 miles in diameter, and this within the last two years.

THE VALUE OF URINARY EXAMINATIONS IN NEPHRITIS.

BY

W. W. Francis, B.A., M.D.

Resident Physician Royal Victoria Hospital.

It was a surgeon, or rather an operator of some fame and reputation, who once made the astonishing statement that urine was meant to be voided not examined, and that specimens brought to his office were usually disregarded by him.

There are but few men of scientific aspirations, or of ambition for careful methods of diagnosis, who will accord with so heterodox a view. Physicians the world over recognize the general rule that the various lesions of the urinary tract are in great part identified by the nature of the renal secretions, and trust in no small measure to this resource to differentiate the seat of the disturbance.

It would nevertheless be interesting to compute from a number of well-regulated hospitals in how far success has met these efforts, and to what extent the urinary examinations have been proved inadequate for complete and satisfactory diagnosis.

For some time past, we have been much interested in the subject, and have taken some pains to note to what extent the pathological findings in the kidneys have verified the suspicions aroused by clinical examination of the urine.

To many who are accustomed to repeated observations of the kind, the subjoined remarks may savour of the nature of platitudes—and yet we have learned that similar observations of much greater heresy than our own have been made among men of eminence to the south of us.

It is among the fatal cases of nephritis that our disappointments

in the value of urinary examinations is perhaps most evident. The most alarming and serious of all cases are those in which there is not only no external evidence of renal disease, but even in the urine one finds little or nothing to anticipate serious results. Perhaps the obstetrician meets with such instances more often than do others. Among our cases one is especially recalled in which repeated examinations of the urine at the eighth month of pregnancy had revealed nothing abnormal. One test, made early in the ninth month, revealed a mere trace of albumen, and two days later the patient succumbed to uræmic convulsions. In another instance, a patient was admitted to hospital on account of uræmic convulsions. The urine, however, showed no abnormality beyond a trace of albumen, and the autopsy made by Dr. Wyatt Johnston showed but a very slight acute parenchymatous nephritis without other lesions to explain the cause of the lethal termination. How one is enabled to estimate the onset of convulsions under such conditions, it is difficult to say. Certainly an estimation of the urea or total nitrogen is of little aid, inasmuch as Von Noorden has long ago shown that there is no constancy in the excretion of nitrogen in this very disease, and that though the average total output may be small, yet so great are the variations from day to day that no importance may be attached to one or two examinations alone.

There is another feature in the examination of urine to which attention has been repeatedly drawn in recent years—viz., the frequency with which casts may be present in the urine without albumen. Dr. F. B. Jones has amply demonstrated this fact in a series of examinations made on all classes of cases and varieties of diseases other than primary nephritis at the Royal Victoria Hospital, and the condition is universally recognized and the comparative significance of the finding duly understood., Yet, one doubts if it is sufficiently recognized that casts in *very great* abundance may exist under similar conditions. We have at present under treatment a young man with gout and arterial sclerosis. The urine rarely shows even a trace of albumen, and yet every examination of the sediment showed, on admission, an unusually large number of casts of various kinds. One of the most abundant samples we have seen belonged to an old man who had every other evidence of chronic interstitial nephritis, and though no albumen was present, there were casts in enormous numbers. Such examples are frequent enough, and especially common during convalescence in nephritis, both acute and subacute. In one patient recovering from an erysipelatous nephritis, the urine showed on repeated examination, a mere trace of albumen but hosts of casts (50 in a slide without sedimentation).

It is likewise of interest to note in how many instances the reverse condition may be present, viz., that with various forms of nephritis there is an abundance of albumen with an entire absence of casts, and this, too, without necessarily an alkalinity of the urine.

This condition has interested us not a little, and in at least three cases the urine was found to have more than eight grammes to the litre, and yet casts were of extreme rarity in each instance. Such a finding may be present in either chronic parenchymatous nephritis or with advanced interstitial inflammation. The amount of albumen in our cases of this kind varied from one to fifteen grammes.

A very marked instance occurred in a young man of 18 years, who had been ill for more than a year with progressive pallor, œdema and weakness. On admission to hospital he presented the puffy, pallid appearance so commonly found in chronic parenchymatous nephritis. The urine was somewhat diminished, but the specific gravity was lower than normal. A very large amount of albumen was repeatedly found, the estimates showing a variation from four to fifteen grammes to the litre. Casts were never found in the urine. As a rule, the reaction was faintly alkaline, though often acid, and yet no casts were detected at any of the examinations. The boy died a few weeks after admission, and the kidneys showed a marked chronic interstitial nephritis.

In yet another class of cases the clinical conditions, even combined with urinary examinations, render a positive detailed diagnosis of great difficulty; where blood casts are repeatedly passed, in a urine which is more often free from albumen than otherwise, it is hard always to know what condition is the cause. Such a case was found in a young man who consulted us for frequent headaches and insomnia. Examinations revealed no other lesions than those above mentioned The urine was of normal amount and specific gravity, but from time to time traces of albumen were present, sometimes a very definite ring being found with Heller's test, but at no time sufficient to estimate by Esbach's method. Microscopically, one found hyaline and blood casts at each examination—often fairly abundant.

The man had attacks of uræmia every few months, with marked headaches, vomiting, cramps in the legs and diminution of the quantity of urine. There was but little evidence of arterial disease. There was no sign of calculus.

To have then a condition of the urine in which blood casts are persistently present, and yet no other sign of acute nephritis, renders that diagnosis quite unlikely—and yet so constant a finding is certainly rare in the more chronic forms of cardio-renal disease.

Indeed, the microscopical finding of blood in the urine is in not a

few cases of utterly unexplained origin. There are so frequently instances in which it is utterly impossible to say whence it has come, and if even suspected to be from the kidneys, one cannot by any means say absolutely as to its clinical significance.

Its presence is not uncommon even in chronic interstitial nephritis, and though we are accustomed to speak of some of these cases as instances of acute attacks engrafted on the old, it is more than doubtful if such an explanation is in reality satisfactory.

It is, however, in the efforts at differential diagnosis of the special kind of nephritis present that we are most liable to suffer from the mortifying disclosures of the autopsy room, for just in these very cases are sometimes the urinary examinations apt to deceive. Dr. Cabot has already drawn attention to the fact in a paper read at the Johns Hopkins Hospital some months ago. In many of his cases the clinical examinations of the urine were entirely at variance with the condition in the kidneys expected at autopsy, and where clinically the diagnosis of marked renal disease was made, the latter examinations revealed normal kidneys. Where one expects to find clinical evidences, such as a large amount of albumen, and perhaps numerous casts of different kinds of chronic parenchymatous nephritis, one is at times surprised to discover at autopsy granular kidneys of advanced degree; certainly in advanced interstitial nephritis one may get both marked anasarca and a very large amount of albumen, quite as much indeed as in any case of chronic parenchymatous inflammation.

Other cases, again, will show from day to day such extreme variations in the quantity of albumen and the specific gravity that it is difficult to decide on this basis as to the detailed diagnosis. Thus, for example, there came to hospital a man, aged 44, with pale cyanosis, general anasarca, marked dyspnœa, and a hypertrophied heart. The urine, which was less than normal in quantity and of a rather low specific gravity, showed on one day 4½ grammes of albumen to the litre, and on the following day and subsequently till his discharge less than .25 grammes. The same held true in a case of nephritis following pregnancy, though the variations were more marked—on one day five grammes of albumen being present, on the next day a mere trace, while 24 hours later the specimen examined revealed again as much as four grammes. This question of variation in gravity of the disease is of special interest, in view of the results claimed for operative interference, and two of our cases are worthy of note in this respect. In one instance, the patient suffered from severe and protracted chronic parenchymatous nephritis, which for some time was resistant to all methods of treatment adopted. The condition being rather discouraging, very

little was done, and operation was discussed for some weeks, during which time spontaneous improvement followed and continued till the patient left the hospital with a mere trace of albumen, little or no anasarca, ascites and hydrothorax gone and general conditions greatly improved. Operation would doubtless have been credited with an improvement, to which, on pathological grounds, it is scarcely entitled.

A similar case occurred in a child of eight years, who left the hospital almost moribund from a post scarlatinal nephritis, with general anasarca, and all hopes of improvement were abandoned. After some days of lingering in her own home, she showed signs of a change, and has gradually become free from most of the signs attending her illness. Albumen is, of course, still present, and the lethal termination is but deferred.

The resemblance in this case to the condition discussed by Dr. Primrose at a previous meeting is worthy of note.

It is again but little recognized to what a severe degree the renal tissue may be invaded by malignant new growths, and yet leave the urine practically normal. We recall two cases of generalized sarcoma in which both kidneys were so gravely involved that most of the normal tissue was replaced by new growth. The urine was repeatedly examined from day to day, and yet only an occasional trace of albumen and an occasional hyaline or granular cast gave evidence of renal involvement.

It can be readily seen then that while careful examinations of the urine are often of the greatest value, and that it is a part of every physician's duty to make the most accurate examinations of the urine possible, that nevertheless the results are not infrequently disappointing, and we have much yet to learn if we will acquire a thorough understanding of the relation of urinalysis and diseased renal tissue. Just what is the clinical significance of quantitative estimates of albumen is not by any means understood. Wherein lies the significance of hyaline and granular casts is a matter of much discussion, while, again, the ordinary estimation of urea, as so frequently done by many physicians, is absolutely valueless for diagnosis or prognosis.

The quantity of urine and the specific gravity appear to be of more value than anything else, and Cabot, in his recent investigations, came to the same conclusion.

We are asked to state that His Majesty the King has been pleased to accept a copy of the "Autobiography of Mr. Frederick J. Gant, F.R.C.S., Consulting Surgeon to the Royal Free Hospital," which has just been published.—*British Medical Journal.*

PANOTITIS DURING TYPHOID FEVER.

BY

G. K. GRIMMER, M. D., F. R. C. S. E.

Panotitis is a term, which was introduced by Politzer some years since, to describe a form of disease of the organ of hearing in which the middle ear and labyrinth become affected by inflammation either simultaneously or in rapid succession. That author states that it occurs chiefly in children, either as a primary affection or in the course of scarlatinal diphtheria, that it always attacks both ears and leads to total deafness, after a strikingly short period. The primary form begins with high fever and is often accompanied by eclamptic seizures with or without loss of consciousness. The eclamptic attacks extend intermittently over a period of a few hours to several days; and on their cessation the patient is found to be totally deaf, with both tympanic membranes perforated and a discharge issuing from the tympanic cavities. "In all cases thus far reported, the affection was associated with a staggering, uncertain gait" (Politzer).

In the case to be described, the symptoms observed were strikingly like those enumerated above as characteristic of panotitis, and since a search through available literature failed to reveal the record of a similar one occurring as a complication of typhoid fever, these facts have been considered sufficient warrant for giving the following report:

On January 24th., 1904, P. E. H., a girl of eleven years was sent by her family physician to consult me in consequence of extreme deafness and a persistent purulent otitis media of both ears.

Family History. — Both parents healthy; father is robust city police constable; one sister and one brother living, healthy; one brother of three years died after a few hours illness with convulsions.

Personal History.—Good up to present illness.—On 11th December, 1903, after being unusually dull and heavy for a few days the patient complained of a headache and sore throat, and was found to be feverish. The family doctor who then saw her took the case to be one of early typhoid fever and this diagnosis was confirmed later. The sore throat consisted of an acute pharyngitis; no membrane was present in the fauces or pharynx at any time during the illness nor did desquamation of the skin occur. There was a muco-purulent discharge from the nose for a few days at the onset of the attack.

On the night of the 13th December, the father states that he noticed occasional twitchings of the limbs and face, and about this time the child commenced to complain of great pain in the ears. On the following day there were several periods of delirium, associated with convulsive movements of the limbs and complete unconsciousness lasting for some hours; between these attacks there were intervals of consciousness,

but it was not observed whether or not she was deaf at that time. The delirium, convulsions and unconsciousness continued to appear for about 48 hours, when a sudden improvement in these symptoms was evident; the intellect became clear and active, and then, or very soon after, a profuse discharge was detected escaping from both ears. The patient was now observed to be deaf, and the deafness was extreme; since the mother states that although the child noticed movements quickly her attention could not be attracted by loud shouting, or by an alarm clock set striking near her ear; and that she could only be communicated with by writing questions on paper to be read, which was easily and quickly done. Immediately after this the patient passed through a moderately severe attack of typhoid fever with the characteristic stools, enlarged spleen, etc. of that disease.

In the fifth week of the illness she was allowed to sit up and at once complained of giddiness, a day or two later when she attempted to stand a similar complaint was made, this was then thought to be due to the weakness caused by typhoid fever. But giddiness continued to be frequently complained of for some weeks and staggering accompanied all efforts to walk for a like period, consequently it is presumed that the labyrinthine involvement was the chief causative factor of these symptoms.

For six months after the illness, if the patient made a sudden turn when standing or walking she became giddy and would frequently fall.

The discharge from the ear at the onset was profuse and muco-purulent, then yellow, creamy and purulent, later it became thinner, darker coloured and very offensive in odour, notwithstanding frequent antiseptic syringing by the family physician and mother.

Condition on January, 24th, 1904. — The patient is an anæmic, fairly well nourished girl, and seems intellectually bright. She stands and walks unsteadily; with the feet wide apart as if uncertain of maintaining her balance.

The Hearing. — She cannot undestand words spoken in any tone of voice, and appears not to hear a very loud sounding whistle, or other loud sounds when made behind her back, and when asked in writing if she had heard any sounds or noises, says she had not. She answers written questions quickly and intelligently. C. and C4 tuning forks strongly vibrating applied to any part of the cranium, she said she could hear. but since she could not describe the sounds she claimed to hear, it was presumed that she felt the vibration only.

After syringing fœtid puss from both ears the following was observed:

The right ear showed a large polypoid mass blocking completely the view of the deeper structures. In the left a narrow rim of the tympanic

membrane only remained, about one sixteenth, (1-16) of an inch wide with the malleus and incus lying dislocated in the tympanic cavity surrounded by granulations.

On January 25th, the patient was placed under an anæsthetic and the polypoid granulations removed from the right ear with the cold wire snare, and later the incus came away with syringing; the malleus was not seen. From the left ear the malleus and incus, being dislocated, were picked out, their attachments being so loose that they came away without the least resistance, the granulations were carefully curetted away.

Antiseptic syringing was then carried out regularly and the discharge gradually lessened.

9*th. March.*—The right ear had not been treated for a week and the tympanic cavity was perfectly dry, the only remaining portion of the tympanic membrane was a small semi-lunar shaped portion in the Shrapnell region. The left tympanic cavity was still moist but discharge very slight, the rim of tympanic membrane was still present.

11*th. April.* — Both tympanic cavities were dry and have remained so without local treatment to present date, December 7th., when the general health is excellent, but the deafness absolute.

In cases like this one, Politzer claims that the loss of hearing is brought about either by purulent inflammation of the membraneous structure of the internal ear or by the invasion of micrococci into the labyrinth, which leads to disorganization of the terminal filaments of the acoustic nerve.

The medical treatment carried out in this case was the hypodermic injection of 4 to 8 minims of 1 per cent. solution of hydrochlorate of pilocarpine daily for a month, with the internal administration of iodide of potash over an extended period. But the result has been, as in nearly every case of the kind previously reported, namely extremely rapid, complete and permanent loss of hearing, for all tones, sounds and noises.

MALIGNANT PUSTULE.

BY

R. P. Campbell, M.D.,

Medical Superintendent Montreal General Hospital.

The following case, which occurred in the surgical service of the Montreal General Hospital, under Dr. Armstrong, is of such rarity in Canada as to justify the following notes of its main features.

M. F. was admitted to the Montreal General Hospital on September 28th with a large malignant-looking carbuncle on the apex of his right shoulder. He gave the following history:—

On Sunday, September 25th, patient had felt out of sorts, but had

had no definite complaints. The following day he noticed that his right arm and shoulder felt stiff and itchy, and experienced several chills and chilly sensations. In 48 hours he was obliged to remain in bed, and vomited two or three times, and on the evening of this the third day accidentally discovered a swelling on his right shoulder. On account of the stiffness in his arm and general feeling of illness, rather than from any pain in the swelling, he consulted a physician, who reported that he found two large blebs surrounded by a dark blue-black area, the size of a silver dollar, and this in turn surrounded by a reddened zone. The patient's general condition, as marked by his prostration, vomiting and rapid, feeble pulse, appeared to him so serious that he advised him to seek admission to the hospital. This he refused, but after another 24 hours elapsed, the condition in general was so aggravated that he consented, and was brought to hospital at 11 p.m. September 24th, 1904, nearly four days after onset.

The patient was a well-nourished, well-developed man, with an unusual development of hair over chest and body generally, and a well-marked hæmorrhagic rash, which was explained by the presence of pediculi. His general condition was that of a very sick man. Pulse, 130, small and easily compressible. Respirations slightly increased, 28, and temperature $98\frac{2}{5}$. He would answer questions readily, but a connected account of his illness was obtained with difficulty. He was extremely restless, and complained of the stiffness and discomfort of his shoulder rather than of actual pain. Beyond the increased pulse rate, his heart showed nothing abnormal, and a careful physical examination of thorax and abdomen showed their respective organs apparently unchanged.

On the apex of right shoulder over the outer third of the spinous process of scapula is a large carbuncular-looking sore, which consists of two large blebs about the size and shape of a large almond, and lying side by side, one broken and its contents forming crusts, the other filled with sero purulent contents. Immediately about these were numerous smaller ones, varying from the size of a split pea to that of a pin's head, and only evident on close examination, the contents being serous. The skin, for an area of one to two inches around about these pustules was blue black, and shaded rapidly off into dark dusky red, which was sharply limited above at root of neck, and shaded into lighter tints elsewhere, spreading anteriorly and posteriorly to axillary folds, and down the arm as far as insertion of deltoid muscle.

The whole shoulder was extremely swollen. The skin tense and glistening, the bony and muscular prominences obliterated, the swelling and œdema reaching as low as elbow or lower. He could move his

arm to limited extent. Sensation to pin prick was almost absent. The axillary and cervical glands were not palpable. The malignancy and pustular character suggested the diagnosis, and a smear was immediately made from the contents of one of the larger pustules. A large bacillus —with square ends—was repeatedly found, generally in short chains of two, but frequently singly.

Immediate excision was recommended and performed by circular incision about pustule, the piece removed being just short of four inches in diameter. The wound was left open. Hypodermic stimulation was pushed and subcutaneous injections of normal saline. In eight hours the wound was dressed, and surrounding parts had improved in appearance. A blood culture taken at this time showed presence of anthrax bacillus. Previous cultures made from the pustule showed the same organism, a leucocytosis was apparently present, but an accurate white count was attempted too near death to be of much importance.

The general condition grew gradually worse, vomiting and sub-normal temperature continued, mental condition and restlessness unchanged, and patient died 19 hours after admission.

The autopsy showed the following points of interest:—The spleen only moderately enlarged, and from its substance a pure culture of anthrax bacilli was obtained.

In the heart blood a smear showed the bacillus. A culture gave a mixed growth of B. coli and anthrax.

Apart from cloudy swelling of organs and a slight bronchitis, nothing further of note was observed. Culture from meninges was sterile.

One of the most interesting features of the case is the apparent mode of infection. The patient was a labourer, and had always been healthy. He had done no work of late, with the exception of the two or three weeks immediately preceding his illness, when he had worked in a tannery, sorting beef hides. These he handled at first with his naked hands, and in consequence these became much lacerated and bleeding. He therefore had a leather glove made for right hand, with which he did his work, aiding occasionally with his left.

According to patient and his wife, he had a habit of scratching himself about the shoulders, for which the presence of pediculi gives ample cause. It is only necessary to presume that the patient with his unprotected left hand infected his right shoulder through one of these bites. Unfortunately I have been unable to discover the source of the hides.

This is the third case of malignant pustule which has occurred in the Montreal General Hospital, as far as the records show. The first occurred in 1873, under the late Dr. Fenwick, and was reported in

Canada Medical and Surgical Journal by Dr. Roddick, then house surgeon of the hospital. Although the bacteriology of this case was not worked out, its clinical features seem sufficient to justify a diagnosis.

The second occurred in 1901, under Dr. Armstrong, and was reported before this Society by Dr. Von Eberts. The treatment here resorted to was incision, and was followed by the best results. No bacilli were found in blood on this occasion. The temperature was 102⅖ and pulse 50 on admission, the fever decreasing and pulse increasing almost immediately after the operation.

While it is impossible to draw definite conclusions from so few cases, yet the evidence would tend to show that the presence of bacilli in the blood is at least in man an evidence of a fatal termination.

With regard to treatment, we have made little or no advance in thirty years, perhaps much longer. Excision, the actual cautery and many special solutions have been employed with varying success, and discarded, and from Bergman's clinic comes perhaps the most recent advice to do nothing further than keep the part at rest, with antiseptic dressing.

SEPTICO-PYÆMIA.

BY

RIDLEY MACKENZIE, M.D., and B. D. GILLIES, M.D.

F. L., female, aged 25, unmarried.—I saw the patient on the night of December 20 for supposed alcoholism. She was up and about, but in a stupid condition, and could give no very clear account of herself. The temperature was subnormal, the pulse rapid, and I prescribed a sedative.

The following morning she had a temperature of 102°, pulse 140, great tenderness in the abdomen, and an enlarged spleen. The condition suggesting typhoid, and she was sent to the hospital. On admission: temperature, 103⅖; pulse, 148, rspirations, 56. The urine contained albumin and casts; the abdomen very sensitive; a pelvic examination was made with unsatisfactory results.

She was transferred to the medical wards. A garbled history was obtained; the only fact of interest was that she had had a fit a week previous, lasting half an hour; she had had no epistaxis, but diarrhœa had prevailed for a week. The respiratory and cardiac system showed nothing abnormal. The abdomen was full, and so sensitive that palpation was unsatisfactory. There were no rose spots. The spleen was much enlarged, the dull area measuring 6½ x 4½ inches. The pupils were equal and active, and slightly dilated. The knee jerks were present, no ankle clonus; plantar reflexes present, no Kernig's sign; Ehrlichs reaction was positive, Widal reaction negative.

A diagnosis of typhoid fever was made, and the patient was put on bath treatment, which had very little effect upon the temperature—pulse, 160; respirations, 48; heart sounds clear.

The day following the patient was very restless, with twitching of the left foot and arm, and paresis of the right arm and leg; head and eyes turned to the right; no pupillary change.

The following day, in which she died, the temperature rose to 107° and the pulse to 176. The right side of the face paralyzed; Babinski's sign present, lumbar puncture was done, and about three drams of clear watery fluid withdrawn, which on media gave a pure growth of staphylococci.

The autopsy findings gave a clear picture of the conditions present. The points of interest in the case are:—

1. The typhoid condition; enlarged spleen; Ehrlich reaction, and the temperature range (nonseptic type)
2. The large vegetations on the mitral valve without clinical signs.
3. The original focus from the salpingitis usually considered sterile; and the findings of the bacilli in the cerebro spinal fluid

Dr. W. D. GILLIES:—The autopsy was made sixteen hours after death. The patient was well nourished, and showed nothing special on inspection. On opening the chest the heart was found to be somewhat enlarged, and on making an examination of it the vegetations on the mitral valve were very marked, some measuring half an inch in length. Smears showed no cellular elements whatever, merely fibrin and pure cultures of staphylococci, the staphylococcus aureus, as also did cultures from the heart blood; there was nothing in the lungs. In the abdomen the spleen was enlarged, capsule smooth, and externally was exactly like a typhoid spleen; there was nothing but a friable hyperplastic pulp on incision of the organ. In the intestine the Peyer's patches were somewhat hyperplastic. At two points there were embolic foci about an inch and a half above the lower part of the ileum. Both kidneys showed embolic abscesses scattered irregularly throughout the kidney tissue itself. On coming to the pelvis the organs were found to be completely matted together; the uterus was somewhat enlarged and bound down, and there were evidences of an old pelvic peritonitis. Both tubes were enlarged, the left containing some turbid fluid, which showed in smears staphylococci and a few colon bacilli. Cultures were made from this and confirmed the smears; only staphylococci and colon bacilli grew. This was the only focus that we could find which might give origin to the septico-pyæmia from which the patient died. On opening the brain, accounting for the clinical feature of paralysis of the right side, we found embolic foci situated over the left ascending parietal

convolution, and on the posterior part of the left second frontal convolution, also over the median surface of the anterior part of the left quadrate lobule there was a similar embolic focus, and about these there was evidence of an acute encephalitis. The fluid we obtained from spinal canal was as clear as water, which on standing formed no coagulum, and the cellular elements were a few polymorphonuclear leucocytes. However, we obtained a pure staphylococcus culture. Throughout the organs the infection was pure staphylococcic, and the only place I could establish as a focus was the left tube.

Dr. Vidal of Nisson, who appears to be a fine old country doctor all of the olden time, gives the following account of a recent encounter with a wild bacteriologist. The incident so admirably illustrates the contrast between the old style and the new in medical practice that we venture to tell the story here as it may tend to the edification of some of our readers. A child, aged ten, had a bilious attack, which the over-anxious parents took it into their heads to be a manifestation of tuberculous meningitis. Behind the back of Dr. Vidal, who was their ordinary attendant, they sought counsel of a young physician in a neighbouring town. The opinion of this pundit was conveyed to Dr. Vidal on a card enclosed in an unsealed envelope. It was in the following terms: "Kernig positive; slight embryocardia, especially in Azoulay's position; cryoscopy and Kochibacilloscopy of Quincke's fluid would supply basis for judgment. If negative, Eberth or Talamon-Fraenkel might be thought of. In the former of these two hypotheses, I could bring, on receiving intimation from you, some Chantemesse serum; in the second, I could bring specialist to do Quincke's puncture." To this cryptic message Dr. Vidal sent the following reply: "Veni, vidi, vici. *Veni:* neither on bike nor auto, nor moto, nor in a boat, but in a phæton. *Vidi:* neither myosis nor mydriasis, nor vasomotor red line nor Wunderlich—simple synocha. *Vici? Naturam sequere.* Expectant treatment. The patient goes on under his blankets ἐξ ἀκνιήτυο ποδός (without stirring a step) in the words of Sophocles, whom in spite of his antiquity I love, towards *restitutio in integrum.* Archfraternal thanks to the Quincke specialist." We need not dwell on the piquant contrast here presented, between the old and the new generation of practitioners. The country doctor's wit may be a trifle laboured, but there can, we think, be no doubt that he had the best of the encounter, and that his sound clinical sense shows well against the laboratory jargon of the younger man who saw bacteriological torpedoes where there was only a patient with a stomachache.—*British Medical Journal.*

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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VOL. XXXIV. FEBRUARY, 1905. No. 2.

AN OFFICIAL IMPIETY.

One day last week two men appeared at the Montreal Maternity Hospital, and alleged that they were officers of the law. Partly by fraud and partly by force, they violated the sanctity of the institution by opening every door and exposing every inmate—sleeping nurses and sleeping or suffering patients—to their profane gaze. One of the men was Deputy High Constable Lambert. These are the facts as set forth by the sworn attestations of eye-witnesses to the outrage, and the feeling which has been aroused in the public mind is one of horror at this gross infringement of morality and decency. The action of these men was odious. Their conduct was wanton, violent and cruel. By these simple terms we mean to imply that these two men have violated every sentiment which distinguishes humanity. Indeed, Dr. Evans, the accoucheur, who was an unwilling witness of the shameful incident, de-

liberately applied the epithet of "brute" to the principal offender in the open court, and we are inclined to believe that the term has some definitive value.

It is the impiety of the action which is so shocking. A maternity hospital is a sacred place, made sacred by the great sorrow and suffering which is experienced within its walls. What makes the outrage more shameful is that this hospital is conducted according to the highest principles of philanthropy; and almost at the very moment when these ruthless acts were being perpetrated, a great function was in progress for the furtherance of the work, which was assisted by the presence of the representative of His Majesty—and his wife. The hospital is not a place for women alone who are fallen away from the conventions of society and of morality. Women of unimpeachable virtue are encouraged to pass their great hour within its doors, and every sentiment of humanity rises up in revolt against the violation of their confidence.

If the authorities of the hospital leave anything undone to avenge this violation, they will prove themselves unworthy of their trust. If they cannot obtain an absolute guarantee for ever against a repetition of the outrage, they had better close the doors of the hospital for good. Finally, we are advised that the officials and employees of the hospital who were actually present would have been justified in using "all reasonable violence" to prevent the commission of the crime, in precisely the same manner as they would resist a gang of burglars who had broken into the hospital in pursuit of their profession. A very acceptable atonement would be the official head of Deputy High Constable Lambert in an envelope.

Yet are we not blind to Lambert's point of view. As an individual, we are informed, he is a man of many good parts. To a detective every citizen is a criminal, either *in esse* or *in posse*. Constant contact with criminals blunts the sensibility, and a time comes when society must be protected aganst its own protectors. That time has now come in the career of the Deputy High Constable.

THE IMPERIAL MEDICAL ACT.

A bill has been introduced in the Imperial House of Commons to amend the Medical Act of 1858. It was presented by General Laurie, and supported by Mr. Rothschild, Sir Howard Vincent, Mr. Middlemore and Sir Mancherjee Bhownaggree. It was ordered to be printed so long ago as 23rd February, 1903, and will come up again at the next session. The most important provision of the bill is contained in paragraph twelve, which reads as follows:—"Doctor or Bachelor, or Licentiate of Medicine, or Master in Surgery of any University or

Medical School in the Empire at which the curriculum of studies and the examinations required to be passed by the undergraduates shall be accepted and recognized by the General Medical Council as equal in all respects to the requirements from students and candidates for degrees in the institutions shown in paragraphs one to eleven of Schedule A."

Since the passing of the Medical Act of 1858, great advance has been made in medical education throughout the Empire, especially in the dominions across the seas. This bill provides that where the examinations and course of education at the principal colonial schools of medicine are in all respects the same as those practised in the United Kingdom, and subject to the supervision of the General Medical Council, medical men from Greater Britain should, when proved to be properly qualified, be admissible to serve the Empire in the naval and military and civic services of the Crown.

Surgeons of high standing in Canada, and holding commissions from His Majesty in the militia, volunteered for service in South Africa, and a complete field hospital was offered by Canada, and in both cases the War Office refused to accept such service, on the ground that it was contrary to the Medical Act of 1858 to permit a surgeon on the Colonial Register and colonially trained to attend professionally to British troops.

The object of the amending bill is to remove this disqualification, and the importance of it cannot be overestimated. If the bill pass into law, the benefits which will arise under it will be for the Imperial services as much for medical men from the colonies.

THE UNION BANQUET.

The medical profession of Montreal will sit together at dinner on the 21st of February. The occasion is a joint banquet which will be held by the Medico-Chirurgical Society and La Société Médicale. This is the first time in the long history of these Societies when both elements in the profession, French and English, will meet together in this manner of friendship. It is significant of the closing of the breach which has too long kept French and English divided. The wonder is not that we should come together, but that we should have remained so long apart. It is not an affair of religion which has divided the profession and the Societies, for men who profess an adherence to both creeds belong to the Medico-Chirurgical Society, and have occupied the highest offices; nor of language, for nearly all the members of both Societies speak both English and French; nor of professional attainments, for both have equal facilities for training and make adequate use of them. This division belongs to the past, with its bad prejudices.

The dinner will be held at the Windsor Hotel, and tickets may be had from Dr. A. Ethier, 320 St. Denis Street, or Dr. A. T. Bazin, 454 St. Antoine Street, treasurers respectively of the Societies. The price of tickets is placed at three dollars, and any member who absents himself without good cause is not doing his duty by himself and his colleagues. Let us make this event the beginning of better things.

In May, 1904, attention was called to a civic by-law under which physicians were ordered to report all births occurring in their practice. After six months' operation, the regulation has proved ineffective, not more than half the births being reported. A new enactment is now under advisement by which the duty is placed primarily upon the parents, where it properly belongs. We pointed out at the time that the enforcement of the original by-law was probably beyond the power of the civic authority or even the provincial legislature, as a gratuitous duty could not be imposed upon a body of men without their consent. Now that the regulation is about to be placed upon tenable ground, we must that it will be enforced to the letter. The registration of births is essential in every civilized community. An obligation which is assumed voluntarily is rarely satisfactory, and now that the civic authorities are proceeding upon constitutional grounds, the enforcement of the regulation rests entirely with themselves.

By the resignation of Dr. Oskar Klotz, the Governors' Fellowship in Pathology at McGill University, instituted in 1899, has become vacant. Dr. Klotz is a graduate of Toronto University, and has during the tenure of his fellowship done much valuable research work, including studies upon a bacillus isolated from water agglutinating with high dilutions of typhoid serum, and on the isolation of a motile micrococcus causing an epizootic among rabbits, both published in the *Journal of Medical Research,* together with several studies in morbid anatomy. His most important work, shortly to be published, is on the part played by soaps in the process of pathological calcification. The fellowship is open to graduates in medicine who have done some previous medical research work, and is tenable for two years, with a salary of $500 per annum.

The disaster of fire which overtook the Royal Victoria Hospital served to demonstrate the excellence of its construction, and the competency of its management. The fire, while serious enough, was confined to the kitchen, where it originated, and never at any time threatened the wards. The patients were scarcely alarmed, and very little inconvenience was

caused by the interruption of the food supply. The officials, nurses and staff dealt with the emergency in a manner which was entirely creditable, and the governors were at hand early to give advice and instructions. The fire was scarcely extinguished before a communication was received from Lord Strathcona, the President, urging that the restoration be proceeded with at once, and that the means would be forthcoming. The incident will serve as a warning to other institutions to be on the alert against a danger to which all are subject.

Two years ago the provincial legislature, with its habitual jocularity, handed over the regulation of barbers' shops to the barbers themselves. The appearance of zeal which those operators manifested for the public health was worthy of a congress of professors of hygiene, but we have not observed that the shops are more cleanly than they used to be, any more than we have observed that plumbers are more efficient since that branch of sanitary science was entrusted to the plumbers' union. The thing was a pretext to create a close corporation; so we are assured by the barbers who have been denied admittance to it. If the barbers desire inspection, let them have it; but let it be done by inspectors properly appointed by the civic authorities.

The December issue of the *Annals of Surgery* sustains the verdict that it has achieved an undisputed place as the leading exponent of surgery in the English language. This issue signalizes the close of the first twenty years of the publication of this journal, and the publishers have properly marked the event by issuing a Festshcrift number, which is more than double the usual size, and is remarkable for the value of its contents, the number and authority of its contributors, and the abundance and quality of its illustrations. We note the appearance of Dr. F. J. Shepherd's paper upon Hernia of the Bladder complicating Inguinal Hernia.

The present civic arrangements in Montreal for conducting examinations into the cause of death are worthy of a mediæval city. The facilities which are enjoyed by the pathologists at the morgue would not be tolerated in an abbatoir. As usual, the difficulty arises out of a conflict between civic and provincial authority. But there is promise of better things. At the next meeting of the Health Committee, the documents bearing upon the case will come up for consideration. Even the present arrangements are better than the proposal that a morgue should be erected by a private contractor, who would recoup himself out of the burial fees.

The reception which Earl Grey, the Governor-General, received at the University on the 25th of January was extremely cordial, and the impression which he created was profound. The representative of His Majesty is the official Visitor to the University, and it was fitting that all the elements of university life should be present upon the occasion of his receiving the honorary degree. We understand that Earl Grey was much impressed by the various departments of the University, and by the hospitals which are so closely allied with it.

Senator Fulford, who is said to be the proprietor of a popular preparation for anæmia and other disorders and diseases, has donated to the Brockville Hospital the sum of ten thousand dollars for the erection of a nurses' home. This is a form of expenditure which will commend itself to the profession more fully than that which goes into the coffers of the newspapers which have advertising space to dispose of.

The Librarian of the Medical Faculty of McGill University, announces that the library is open in the evenings to medical graduates from 7 to 10.

Reviews and Notices of Books.

GALLSTONES AND THEIR SURGICAL TREATMENT. By B. G. A. MOYNIHAN, M. S. (LOND.), F. R. C. S., Senior Assistant Surgeon to Leeds General Infirmary, England. Octavo volume of 386 pages, illustrated with text cuts, some in colours, and nine coloured insert plates. Philadelphia, New York, London: W. B. SAUNDERS & COMPANY, 1904. Cloth, $4.00 net. Canadian agents, J. A. Carveth & Co., Toronto.

This handsome book contains the material upon which Mr. Moynihan based a course of lectures delivered at the Medical Graduates College, in London, in May, 1904. It includes a detailed account of the etiology, pathology, clinical manifestations and operative treatment of gallstones. It is well illustrated and has a number of excellent coloured plates.

The fact that this work is by so well known and experienced an abdominal surgeon as Mr. Moynihan will at once give it a status. Mr. Moynihan was for many years in Leeds a colleague of Mr. Mayo Robson, and has had immense experience in gallstone surgery. The book is most interesting, and cases which have occurred in the author's practice are used to illustrate and emphasize various points. The directions for preparing operator, patient and assistants are most minute and complete, but are not more especially applicable to gallstone surgery than any

other kind of surgery. It seems, therefore somewhat out of place in such a work, though perhaps there cannot be too much assistance on such things in any work in surgery, special or general.

Cleansing of the patient's mouth beforehand, and even the giving of sterilized food is insisted as a preventative to parotitis and pneumonia. Rubber gloves are to be worn by operator and assistants.

A very good historical account is given of operations on the gall bladder and bile ducts. The first record, we are told, of removal of a gallstone from a living patient was that of Fabricius Hildanus in 1618. In all operations on the gall bladder or bile ducts the use of a sandbag under the patient's back is advised, and Mr. Moynihan gives credit to Elliot, of Boston, for the introduction of this great aid to liver surgery. Most surgeons are under the erroneous impression it was introduced by Mayo Robson. The incision advised is that used by Mayo Robson, namely, a vertical one, made four or five inches in length, through the right rectus muscle near its outer border. If more room is needed, the incision may be prolonged downwards or upwards and inwards, dividing the fibres of the rectus half an inch from the costal margin. In cholecystotomy drainage is advised, and the tube is sewed with gut to the band in the bladder, the wound closed by a purse-string or continuous suture, and the gall bladder dropped back into the abdomen or preferably sutured to the parietal peritoneum by two sutures which suspend it.

The removal of the gall bladder is advised in many cases where it is diseased, and if drainage is necessary, this can be done by suturing a tube to the stump of the cystic duct or even into the common duct itself.

In choledochotomy suturing the common duct has been abandoned without any ill results, drainage of the ducts being always advised.

There is very little said about the influence of gallstones and gallstone obstruction in the pancreas; the subject is merely mentioned incidentally. The symptomatology, early and late, of gallstone disease is very fully and well described, and no unnecessary verbiage or padding is used throughout the book. This "brochure" is pleasant and instructive reading, essentially practical, and should be in the hands of every operating surgeon. We congratulate Mr. Moynihan on having written so valuable a contribution to the surgery of gallstones.

LANDMARKS AND SURFACE MARKINGS OF THE HUMAN BODY. By LOUIS BATHE RAWLING, M.B., B.A., F.R.C.S., Eng. H. K. Lewis, London, 1904, pp. 72. Chandler & Massey, Toronto.

Holden was one of the first to write on landmarks, and his work is

not yet obsolete. It was written in a pleasant style, and was made attractive to the student, but had no illustrations. Later, every treatise on Descriptive Anatomy had a chapter on surface markings, and then separate books appeared all more or less complex, and founded largely on the observations obtained by frozen cross sections. The present work, which is "intended to fill a gap in the series of text-books," is concisely written and well illustrated by photographs of men with the surface marks on them. Not sufficient attention, however, is paid to the surface anatomy of the bones and too much to the arteries. It will be a useful book for medical students going up for examination, and will show them how to examine and mark the landmarks on each other, and in this way be a stimulus to personal investigation of facts. The surface anatomy of the nerves, neck, thorax and abdomen is well done. We recommend it as a handy text-book on surface marking.

AN OUTLINE OF THE THEORY OF ORGANIC EVOLUTION, WITH A DESCRIPTION OF SOME OF THE PHENOMENA WHICH IT EXPLAINS. By MAYNARD M. METCALF, Ph.D., Professor of Biology in the Woman's College of Baltimore. New York: The Macmillan Co., 1904. Toronto: Morang & Co. Price, $2.50.

It is nearly as interesting to know the history of a book as of a man. The writer tells us that "the lectures out of which this book has grown were written for the author's students at the Woman's College of Baltimore, and for others in the college not familiar with biology who had expressed a desire to attend such a course."

So far as we can judge from the work, these lectures must have proved highly successful. They give much and they omit much, and what is presented is put before the reader in a form not only clear but fascinating. The author has not gone forth arrayed in a coat of mail, sword in hand, challenging to battle real or imaginary foes. The necessity for that is past; the battle of evolution as evolution has been fought and won, though many problems yet remain unsolved, and doubtless many more will confront the earnest seeker after truth.

Dr. Maynard has attempted to inform the inquiring but not necessarily technically trained person of the state of scientific opinion on the subject of evolution at the date of the publication of Darwin's great epoch-making work, and for some time after. He has not perplexed him with the more recent doctrines of Mendel, De Vries, Bateson and others, over which such a fierce battle raged at the meeting of the British Association at Cambridge last summer.

Excellent as are the many works that have been published on evolution since the appearance of the "Origin of Species," it may be confidently

said that few have been able to make such a strong appeal to the average intelligent reader as this one.

Fact and theory are mingled in due proportion, which, if Darwin's example is to be followed, always means more fact that theory; while the eye is charmed with beautiful paper, large type and, above all, illustrations, which are worthy of the highest commendation both as to choice of subject and execution. Many of them are in colours. In this book the tired doctor who can get beyond the accustomed round of duty and the usual ruts of thought will find something to beguile him into fields pleasant to the sense and refreshing and expanding to the intellect; and the doctor's wife and children, if they but take one peep, will be sure to want to go further. If this book does not inspire many with a desire to know more of nature, it will be because it is not given a chance. There is so much good to be said of it that we do not care to look for short-comings, if such exist. W. M.

A Manual of Personal Hygiene. By American Authors. Edited by Walter L. Pyle, A.M., M.D., Assistant Surgeon to the Wills Eye Hospital, Philadelphia. Second Edition, Revised and Enlarged. 12mo volumes of 441 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Bound in silk, $1.50 net. Toronto: J. A. Carveth & Co., Limited, 434 Yonge Street.

The object of this manual is to set forth plainly the best means of developing and maintaining physical and mental vigour. Throughout the book there is concise but adequate discussion of the anatomy and physiology of the parts under consideration, upon which is based the subjoined advice. In other words, there is an exposition of proper living upon a physiological basis. In this new second edition there have been added, fully illustrated, chapters on Domestic Hygiene and on Home Gymnastics, besides an appendix containing methods of hydrotherapy, thermotherapy, mechanotherapy, and first aid measures in medical and surgical accidents and emergencies.

Progressive Medicine. Edited by Hobart Amory Hare, M.D., and H. R. M. Landis, M.D. December, 1904. Lea Brothers & Company.

This quarterly digest of new material in the medical and surgical sciences is quite up to the high standard which was set by previous volumes. The contributors are Dr. J. Dutton Steele upon diseases of the digestive tract, including the liver, pancreas and peritoneum; Dr. Joseph C. Bloodgood, upon anæsthetics, fractures, dislocations, amputations, surgery of the extremities and orthopedics: genito-urinary dis-

eases by Dr. William T. Belfield; diseases of the kidneys, by Dr. John Rose Bradford, and practical therapeutics, by Dr. H. R. M. Landis. This retrospect of Medicine is so well known that it is only necessary to add that this volume is particularly good.

DIET IN HEALTH AND DISEASE. By JULIUS FRIEDENWALD, M.D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore; and JOHN RUHRAH, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Octavo volume of 689 pages. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Cloth, $4.00 net. Toronto: J. A. Carveth & Co., Limited, 434 Yonge Street.

From the frequent appearance of admirable volumes upon diet and personal hygiene, it is evident that the importance of these subjects is being appreciated by the profession. This latest work on diet is comprehensive enough to meet the needs of the general practitioner, medical student, hospital interne, and trained nurse. It contains a full account of food stuffs, their uses and chemical compositions. Dietetic management in all diseases in which diet plays a part in treatment is carefully considered, the articles on diet in diseases of the digestive organs containing numerous diet lists and explicit instructions for administering. The feeding of infants and children, of patients before and after anæsthesia and surgical operations and the latest methods for feeding after gastro-intestinal operations are discussed with detail. The subject of rectal enemata is given completely, with recipes and full instructions as to technique. Diet is considered in its relations to age, occupation, and environment; and the beneficial results from the rest cure have been accorded due consideration. There is also a section on food adulteration and diseases resulting from the practice.

THE ANATOMY OF THE BRAIN. A Study of the Human Brain from the Brain of the Sheep. A Manual for Students in Medicine, Biology and Psychology. By J. F. BURKHOLDER, M. D., Professor of Anatomy in the Illinois Medical College. 175 Pages, Octavo, 32 Full Page Plates (5 coloured), Cloth, Price $2.00 Postpaid. Chicago: G. P. Engelhard & Co., 358-362 Dearborn Street.

It is difficult to understand the *raison d'être* of this work on the Gross Anatomy of the Sheep's Brain, by which it is intended to teach students of medicine the human brain. The great scarcity of material is the chief reason advanced by its author. Fortunately Canadian schools are not so disadvantageously placed. They possess an abundance of material and each student is able to acquire a general knowledge of the human brain

from its dissection. This happy result is obtained by the removal of the brain from all subjects received, after preparation and injection, when the brains are placed in a preservative fluid until needed for dissection.

Certainly, students may with advantage undertake the dissection of the internal gross anatomy of the brain of the lower animals, such as the sheep, but simply as preparatory work to the dissection of the human brain. For this any of the text books of anatomy will prove ample. The central nervous system of man now forms so important a part of the medical student's course in anatomy, that its dissection becomes absolutely essential. As a means of teaching the human brain, this work is insufficient, and we cannot recommend its employment by students of medicine to the exclusion of text books which deal with the study of the human brain. J. G. M.

SCIENCE AND IMMORTALITY. By WILLIAM OSLER. Houghton, Mifflin & Co., Boston. $0.85.

In the December number of The JOURNAL we called attention to the Ingersoll Lecture upon Science and Immortality, which was delivered at Harvard University by Dr. Osler, and desire to do so again more formally, now that the lecture is published in book form by Messrs. Houghton Mifflin & Co., of Boston and New York. The book has created a profound impression. If it leaves something unrevealed about the future state it discloses the present attitude of mind towards the subject, as interpreted by a master in the art of exposition.

ONE HUNDRED YEARS OF PUBLISHING.

Under this title Messrs. William Wood and Company have issued a brochure recounting briefly the history of the house since its foundation in 1804 by Samuel Wood, who opened a book-shop that year on Pearl Street in New York. With the exception of the Methodist Book Concern, this is the oldest publishing house in New York City, and throughout its existence the management has remained in the hands of one family—a fact worthy of remark in that country of frequent business changes, as is pointed out in the *Medical Record*. Soon after opening his store Samuel Wood set up a small printing press, and began to publish primers and other little books for children. The first of these publications, issued in 1806, was called "The Young Child's A B C, or First Book." In the course of time the sons and sons' sons were one after another taken into partnership as the elders retired, and under the influence of William Wood and of his son, the senior member of the present firm, the business of the house became gradually specialized in the direction of medical publications. This interesting historical ac-

count of the house of William Wood and Company is illustrated with pictures of the quarters occupied by the firm at various times, as the growth of the city drove them gradually further up town, and with portraits of the successive heads of the house.

Messrs. Lea Brothers announce for early publication a new work upon the practice of medicine, by Hobart Amory Hare.

In the review of "Medical Electricity" in the January Number, the reviewer omitted to mention that Messrs. Chandler and Massey are the Canadian agents for the publisher, Mr. H. K. Lewis, London.

Medical News.

CANADIAN MEDICAL ASSOCIATION.

The thirty-eighth annual meeting of the Canadian Medical Association will be held in Halifax from the 22nd to the 25th of August, 1905, both days inclusive, under the presidency of Dr. John Stewart, of that city. Recently there was held at Halifax a special meeting of the Medical Society of Nova Scotia, when were present several members from the surrounding country near Halifax. It was decided that the Medical Society of Nova Scotia should act as hosts and entertainers of the Canadian Medical Association. Dr. G. Carleton Jones has resigned from the position as local secretary, and the President, on the advice of his executive, has appointed Dr. J. R. Corston as local secretary, Dr. Jones having been appointed chairman of the General Committee of Arrangements. The address in Surgery will be delivered by Mr. Francis Caird, of the Royal Infirmary, Edinburgh, and the address in Gynæcology will be delivered by Dr. Howard A. Kelly, of Johns Hopkins, Baltimore. The title of his address will be "Cystitis in Women." Dr. J. W. Stirling, of Montreal, will deliver an address in Ophthalmology, In addition to this there will be addresses in Medicine and Pathology, and Dr. A. J. McCosh, of New York, will also be asked to present a paper.

The General Secretary is now in communication with the transportation companies as regards rates, and an effort will be made to have transportation extended to Sydney, with return via Portland, Boston or New York. From the manner in which the Maritime medical men have taken hold of matters, it is expected that the meeting in Halifax will be fully up to the best meeting yet held.

Any one desiring to present papers, present specimens or make demonstrations should enter at an early date into communication with the General Secretary, Dr. George Elliott, 203 Beverley Street, Toronto.

ROYAL VICTORIA HOSPITAL.

The eleventh annual meeting of the governors of the Royal Victoria Hospital was held on the 17th January, 1905.

The following appointments were made to the staff of the hospital:—

Associates in Medicine—Drs. Fry, Cushing and McCrae.

Clinical Assistants in Medicine—Drs. Burnett and McAuley.

Clinical Assistants in Neurology—Drs. Robertson, Robins and Russell.

Clinical Assistant in Ophthalmology—Dr. Tooke.

Clinical Assistant in Gynæcology—Dr. Goodall.

Clinical Assistant in Laryngology—Dr. Hamilton White.

Registrar and Assistant Registrar—Dr. Cushing and Dr. McAuley.

Dr. W. J. Cram was appointed externe in the X-Ray department, and Dr. Klotz house pathologist.

The number of patients admitted during 1904, 3,054, showed an increase of 123 over the year previous. There were 1,799 Protestants, 1,106 Roman Catholics, 131 Hebrews, and 18 of other faiths; 1,614 were free patients, 919 public ward patients, paying 50c and $1 per day, and 521 private ward patients; 2,193 were residents of Montreal, and 861 came from districts outside of the city.

The total days of hospital treatment aggregated 74,777, as against 74,111 during the previous year, an increase of 666 days.

The average number of days' stay in hospital per patient was 24.15, as against 25.71 the previous year.

On the 1st of January, 1904, there were 210 patients in the hospital remaining from 1903, and during the year 3,096 were discharged, of whom 1,537 were well, 856 improved, 189 not improved, 329 not treated, and 175 died. Remaining in hospital 31st of December, 1904, 184.

Of the 175 deaths, 52 took place within 48 hours of admission.

The death rate for the year has been 5.66 per cent., or, if those dying within 48 hours after admission be deducted, 3.97 per cent.

The highest number of patients in the hospital on any one day was 226 on the 19th of January, and the lowest was 173 on the 26th December; the highest monthly average was 218 in January, and the lowest 190 in July; the daily average for the year being 205, as against 203 for the previous year.

During the eleven years that the hospital has been in existence, 26,589 patients have been admitted to the wards for treatment.

In the out-patient department the total number of patients treated was 3,992; the number of visits of these patients aggregated 23,094:—Medical, 8,996; surgical, 4,478; eye and ear, 4,142; nose and throat, 4,052; diseases of women, 1,426.

The income for the year 1904 was $148,836, while the ordinary ex-

penditure amounted to $120,449.18; the balance of $28,386.82 being applied in reduction of the indebtedness incurred by the new operating rooms and other additions to the building.

There has been an increase of $30.14 in the expenditure for 1904 over 1903.

The total cost per day per patient has been $1.61; the cost per day of maintaining each person in the hospital—staff, servants, and patients —being 87 cents and the daily cost for provisions for each person 22 cents.

HOTEL DIEU.

During December, 1904, 397 patients were treated. Admitted, 101 men and 89 women; discharged, 106 men and 115 women; died during the month, 4 men and 11 women. The ambulance answered 60 calls, 11 of which were for accidents.

NOTRE DAME HOSPITAL.

One thousand five hundred and seventy outdoor patients received treatment in the various dispensaries during the month of December; 85 ambulance calls were responded to, 46 of which were for accidents; patients admitted, 159; discharged, 165.

A meeting of the County of Labelle Medical Association was held in Buckingham on Wednesday the 18th of January. Drs. J. D. Sicard and Alex. Roderique were entrusted with the carrying out of the arrangements for the reception of the members of the profession. Dr. Robillard, of Thurso, is President and Dr. J. A. Damours the Secretary-Treasurer. Mr. Henri Bourassa, M.P., delivered an address on the bill providing for reciprocity in the professions between the provinces. Drs. Mackay, of Papineauville, Paquette and Edmond Aubry, of Hull, delivered addresses.

Dr. George A. Charlton, late Governor's Fellow in Pathology of McGill University, and late Fellow of the Rockefeller Institute, has been appointed pathologist and bacteriologist to the North-West Territories, with headquarters at Regina, where the Government of the Territories and the College of Physicians and Surgeons will together equip a laboratory under his charge.

The Anti-Tuberculosis League of British Columbia have made overtures for renting the Royal Naval Hospital at Esquimalt, which the Admiralty is abandoning. It will accommodate fifty patients, and is

well equipped. Dr. Fagan, who is the father of the movement in British Columbia, announces that the Association proposes to establish a station for the treatment of tuberculosis in June—money or no money.

The Committee in charge of the "Osler Testimonial Fund" have issued a second appeal for subscriptions. Cheques may be sent to Dr. Wm. Gardner, 899 Sherbrooke Street, Montreal.

The total number of patients treated in the Toronto General Hospital during the past year numbered 3,875. There were 2,191 males and 1,634 females. On the 31st of December, 1904, there were 276 patients in the wards.

The annual meeting of the Ontario Medical Association will be held in Toronto, June the 6th, 7th and 8th, 1905, under the presidency of Dr. Wm. Burt, of Paris.

Dr. Jacob D. White, of St. John, died on the 4th of January in the seventy-eighth year of his age. Dr. White had been visiting physician to the General Hospital up to seven years ago, and was public coroner at the time of his death.

Dr. Harry W. Spence, of Toronto, died on the 23rd January. He was a graduate of Toronto University, 1900, and served in South Africa during the war.

Dr. W. Lamontagne, of Levis, died on the 19th of January in the 60th year of his age.

Dr. Ullyott, of Elmira, died on the 11th of January of pneumonia. He leaves a widow and a family of five children.

Dr. Robert Somers, a graduate of Toronto School of Medicine '94, died in Iowa of pneumonia on the 3rd of January.

Dr. N. F. Snider, of Odessa, near Kingston, was killed in a runaway accident on the 5th of January. He was 63 years of age.

Dr. R. M. Riddle, of Winnipeg, died on the 22nd of January of typhoid fever. He was a graduate of Manitoba Medical College.

We are informed that Her Majesty the Queen, whose interest in sick nursing is well known, has accepted from Mrs. Sarah A. Tooley a copy of her "Life of Florence Nightingale" (Bousfield & Co., London), recently reviewed in our columns.—*British Medical Journal.*

Retrospect of Current Literature.

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

PROF. VON BECK. "The Operation of Cardiolysis in Chronic Adhesive Post-Pleuritic Mediastino-Pericarditis." *Arch. Klin. Chir. Bd.* 73, Heft 4.

There is a certain group of cases of adhesive mediastino-pericarditis, usually following a left sided pleurisy, which is characterized by a systolic in-drawing of a wide area of the thoracic wall together with a diastolic "shake" of the chest. This mechanical interference with the work of the heart is apt to bring on muscle-degeneration, with its sequelæ of "stanungs" liver, cyanosis, rapid irregular heart-action, ascites, œdema over the malleoli, and possibly albuminuria. Apparently this is the latest district in the country of medicine to be invaded successfully by surgery. In 1902, Brauer, of Heidelberg, proposed to relieve the condition by means of an "operative bursting" of the thorax wall—a removal of the ribs overlying the heart; and, thereupon, Petersen and Simon in conjunction with Brauer operated upon three cases of this kind successfully.

In the present article, Von Beck reports three cases of his own. In one there was a wide area of in-drawing of the thorax; in another only at the apex, and in the third hardly any movement of the wall was visible. In all three a diastolic impulse over the heart was evident, and there were present the *reliquiæ* of left-sided pleurisy, with the other signs above mentioned.

The operation consisted in the removal of the third, fourth, fifth and sixth ribs from the sternum to the anterior axillary line, including the periosteum and the intercostal muscles, underneath a horseshoe flap of skin and subcutaneous tissue.

In all three cases this operation of cardiolysis, as it is called, by relieving the heart of the mechanical interference under which it was labouring, brought about a complete restoration of its contractile power and its regularity of action; and in addition relieved the secondary stagnation phenomena in liver, spleen, and extremities.

The first case, an old *empyæma necessitatis* in a boy of 8 years, was able two years after operation to enter into all the sports of boyhood. The second was a long-standing empyæma, in which the heart was so bad that the necessary extensive thoracoplastic could never have been done without the preliminary cardiolysis, which, besides, had the advantage of being in itself a partial thoracoplastic operation.

In the third case, following a pleurisy two years previously, there were present severe anæmia, cyanosis, great dyspnœa, and œdema of

the legs. Walking was almost impossible because of the feeling of suffocation. Great pleuritic thickening, blowing breathing and râles on the left side. Heart enlarged, very irregular, and sounds muffled; with systolic in-drawing, diastolic impulse, and precordial thrill. Ascites, enlargement of liver and spleen; oliguria; and considerable albuminuria present. Five days after operation the heart action was regular and quiet; breathing was easy, and the patient was free of distress; a month later he was able to get up and go about without trouble, and he slept well. The urine was increased in amount, and the stagnation phenomena had largely disappeared. Truly a striking case!

Francis B. Harrington, M.D., and Alfred H. Gould, M.D. "The Use of the Segmented Ring in Gastric and Intestinal Anastomosis." *Annals of Surgery,* November, 1904.

The contribution is a clinical and experimental study. Twenty-two animals were operated upon, and the clinical report consists of nine cases. The advantages claimed for its use are, speed. A complete anastomosis can be easily done in fifteen minutes. Cleanliness, assisted by the clamps, the purse-string suture prevents even a mucous ooze while the continuous stitch is being placed. An intestinal suture is more easily done over the ring than without it. It is safe to use a single layer of continuous stitches, since the ring allows a perfect approximation to be made, and afterwards protects the suture until adhesions have formed. The handle is very useful for holding the intestines in convenient positions for suture. It is not necessary to sew up in layers, since a study from animals and human beings shows that the mucous membrane will slough in any case, and that repair is more rapid when the mucous membrane is not sutured. The presence of the ring guarantees a free opening at the site of operation. In case the continuous stitch should be improperly applied, the weak spots are protected by the ring itself for at least three days, until the ring breaks down. This allows strong adhesions to form. After operation the ring holds the sutures immovable and acts like a splint. The weight of the individual segments of the ring vary from 10 to 30 grains, according to size. This is in marked contrast to most other appliances of a similar nature. The disadvantages of the ring are, general objections to mechanical contrivances, and to one layer of sutures. Too large a ring may cause sloughing of the suture from pressure. A foreign body in the intestine is always a source of danger. The conclusions arrived at are that the process of repair is as rapid after use of the segmented ring as after a plain suture, the time required is less than in a straight intestinal suture. Certain objections, such as weight, ulcer, difficulty

of passage, inherent in other mechanical contrivances, are minimized by the ring. The analogy between experimental and the human observations is so close as to show the propriety of the deductions made from animal experiments. The employment of the ring in human beings is safe and satisfactory for all sutures.

Byron Robinson. "Sudden Death, especially from Embolism following Surgical Intervention." *Medical Record,* January 14, 1905.

Byron Robinson subjects the causes of sudden death to an exhaustive analysis, and then describes nineteen illustrative cases. A large proportion of the instances of sudden death are due to embolism, usually through invasion of a vegetative centre in the floor of the fourth ventricle, or through asphyxia, caused by embolic lodgment in the pulmonary artery. The operations most often followed by embolism are those for appendicitis, hæmorrhoids, hernia and pelvic diseases, and on the kidney, prostate and bladder. Prophylaxis includes placing the patient in as perfect a condition of physiological and anatomical rest as possible, several days before the operation, and by a complete evacuation (a dozen movements) of the intestinal tract, and flushing of the kidney by giving eight ounces of half decinormal salt solution, every two hours, six times a day. With these two systems drained to a maximum, the patient can be placed in the most perfect state of physiological and anatomical rest, which is the safest condition for any surgical intervention, and is a prophylactic against embolism. Such a state withstands to the highest degree the trauma of anæsthesia, shock, peritonitis, infectious, invasions, nephritis, pneumonia, and embolus.

Charles Harrington. "Some Studies in Asepsis." *Annals of Surgery,* October, 1904.

Harrington considers that the danger of infection from sweat during operations is minimal; he has repeatedly examined sweat secretion after the ordinary pre-operative cleansing of the hands, and found it usually sterile. On the other hand the danger of infection from saliva droplets projected into the wound by the mere act of speaking (Flügge's well-known experiments) is in his opinion of far greater importance, because "the secretions of the mouth are likely to be richer in virulent bacteria than the foulest sewage." We must either be silent when operating, or wear proper masks. In the matter of dressings, Harrington emphasizes two points. Tight packing in the sterilizer prevents the access of the steam, and should be avoided. With proper precautions as to packing and vacuum formation, sterilization of dressings and

sponges required, but one exposure to steam under fifteen pounds pressure for thirty minutes at most.

As to the sterilization of the hand, Harrington is quite iconoclastic in his statements—for all of which, by the way, he brings bacteriological proof. He finds the long-used permanganate-oxalic process quite ineffective in a ten-minutes exposure against the staphylococci and B. Coli. All the other ordinary preparations, except alcohol, in the usual strengths and over he finds practically ineffective; "out of 22 not one acted under two minutes, and most of them only after five." Harrington's endeavour was to find a preparation that would kill not in minutes but in seconds. And, to be brief, he proposes the following mixture: commercial alcohol (94 per cent.), 640 cc.; hydrochloric acid, 60 cc.; water, 300 cc.; corrosive sublimate, 0.8 gramme.

The mixture thus contains 60 per cent. absol. alcohol, 6 per cent. commercial (strong) Hcl, and 1-1250 subclimate. It seems, in general, to kill bacteria from 5 to 10 times as quickly as the strongest of ordinary antiseptic solutions. Soaking, even of the unscrubbed hands for two minutes gave almost regularly perfect asepsis. The mixture does not seem to be materially irritating to the skin.

F. J. Shepherd, M.D. "Hernia of the Bladder complicating Inguinal Hernia." *Annals of Surgery.* December, 1904.

Dr. Shepherd cites four cases from his own experience in which inguinal hernia complicated the operation for inguinal hernia, a condition which is present in one per cent. of all cases. Reference is made to Farquhar Curtis' collection of 41 cases, in which the mortality was 25 per cent., and Dr. Shepherd mentions two fatalities which have not been reported. In all of his cases it was the extra peritoneal position of the bladder which protruded; the lower wall of the hernial sac was bounded by the bladder, the peritoneum forming this position of the sac being closely attached to the bladder and pulling it down as it protruded. In Case I., Dr. Shepherd inadvertently opened the bladder, but sewed up the rent immediately, and no harm resulted. In Case II., guided by previous experience, he returned the bladder uninjured, and the recovery from the entire operation was uneventful. The third case was similar to the second, and the result was the same. Case IV. was much complicated by the fact that there was a sac of fluid in front of the tumour, not communicating either with the hernial sac proper or with the bladder. On passing a sound into the bladder, it was seen that the inner and anterior wall of the sac was formed of that organ. The omentum, which was partly adherent, was tied off and cut away, and the sac was carefully dissected from the protruding bladder. In this

dissection the muscular coat of the bladder was wounded, but the bladder was not opened. After suturing the wounded bladder, the sac was tied off and the bladder reduced, all with good results.

In connexion with the condition, Dr. Shepherd calls attention to the following facts:—*First,* the inguinal opening is always large and out of proportion to the size of the protruding intestines. *Second,* the cord is not intimately associated with the sac of the tumour, but can be readily held aside without dissection; it is usually to the outer side of the tumour. *Third,* in two at least of the cases the hernia was a direct one, and in all had been produced by a sudden strain. *Fourth,* the difficulty of finding a neck to the sac, for the anterior portion of the sac stretches away towards the pubis, and may be covered with granular and vascular fat.

MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY, H. A. LAFLEUR AND W. F. HAMILTON.

ALBERT ABRAMS, A.M., M.D., San Francisco, "*The Cardio Splanchnic Phenomenon.*" *American Journal of the Medical Sciences,* January, 1904.

The facts of this phenomenon are correlated to intra-abdominal tension, and the effects of such tension on the circulation. Definition:—If the lower sternal region, i. e. the sternum contiguous to the heart, is first percussed in the standing and then again in the recumbent posture, one may appreciate a decided alteration in the percussion tone. In the former attitude it is resonant or even hyperresonant, in the latter it is dull or flat. This constitutes the cardio splanchnic phenomenon.

Much of the physiology of the phenomenon has been experimentally described by Hill and Barnard in *Journal of Physiology,* Vol. XXI. Vigorous compression of the abdomen will exaggerate the phenomenon in all instances. Three factors enter into consideration in the mechanism of blood supply to the splanchnic vessels, viz.: (1) contraction of the abdominal muscles, (2) respiration, and (3) the regulating vasomotor action of the splanchnic vessels.

In the elicitation of the cardio splanchnic phenomenon, palpatory percussion must be our chief mentor. It is not considered that the cardiac diameters are increased when the phenomenon is present, but the increased dulness is considered due to the fact that the right ventricle is then filled with blood, and this is sufficiently pronounced to dampen the sound obtained from the vibration of air within the lung alveoli.

Clinical and therapeutic points: — Suppose a person complains of

sternal pressure. If this is dependent upon a dilated heart it would disappear on application of a vacuum cup to the abdomen, as the blood would be expressed from the heart to the abdomen and the sensation of pressure would disappear at once.

The phenomenon would prove valuable in the differential diagnosis of a dilated heart from a pericardial exudate; in the latter affection it would not be elicited.

The overtaxed right heart is operative in predisposing to an asthmatic paroxysm and augmenting its severity. In a severe asthmatic attack which resisted the conventional remedies, a vacuum cup to the abdomen arrested the attack.

In dyspnœa from any cause the implication of the heart in this symptom may be gauged by expressing blood from the right heart by means of a vacuum cup applied to the abdomen; if the dyspnœa is relieved we have reasonable assurance that it is caused by an overburdened heart.

The elicitation of the cardio splanchnic phenomenon is unattended by any increase in the blood tension. Our only guide in estimating the amount of blood which is diverted to the right heart is the cardio splanchnic phenomenon, not only the phenomenon *per se*, but the degree of its demonstration.

In syncope it appears that the object achieved is not so much the determination of blood to the brain as it is to the determination of blood to the right heart. The following manœuvres, in order of citation, will express the largest amount of blood to the right heart: (1) Suspension by the feet. (2) Inversion of the patient. (3) Compression of the abdomen. (4) Recumbency.

An overtaxed right heart is present in many cardio respiratory conditions. Instances do occur when bleeding is justifiable, and it would prove more effective if the patient were bled into his own vessels. The application of a vacuum cup to the abdomen meets the emergency and should be employed, if only as a tentative measure, should an overburdened heart with its consecutive phenomena warrant its employment. If this manœuvre is effective, it may be repeated any number of times, as it is a method harmless and painless if the exhaustion of the cup is not executed beyond a reasonable degree.

T. J. Mays, A.M., M.D. "*Vagus Reflex.*" A new physical and prognostic sign in Pulmonary Disease. *New York and Philadelphia Medical Journal*, September 3rd, 1904.

The test is applied by compressing the vagi in the neck. The nerve is readily compressed by standing or sitting before the patient, and laying the thumb over the carotid artery, or better slightly behind it, and

resting the other finger on the nape of the neck and gently pressing the nerve backward against the hard part below.

Characteristics of its presence. In some the sensation is the same on both sides, while in others there is a marked difference between the two. If the sensation is the same on both sides and is not greater than would be produced ordinarily or naturally by the pressure applied, the vagi may be called normal. If the reaction which is called forth on both sides is even and out of proportion to the degree of pressure applied, the vagus reflex may be said to exist on both sides of the neck. Frequently it is present on one side only. Where vagus reflex is very marked there may be the additional symptoms of dyspnœa, dizziness, sweating, retardation of pulse and heart, weakness of extremities, and patient may even become pale, speechless, and drop down before you unconscious and have a slight convulsive contraction of the shoulder and arm muscles. The painful sensation may or may not be accompanied by pain in the eye, ear, head, shoulder, arm or leg of same side.

Results of examining 380 cases (138 persons suffering from pulmonary consumption and 242 healthy persons).

Of the 138 cases of pulmonary consumption 97 per cent. of the cases had the vagus reflex and the pulmonary affection on the same side, or had the reflex on both sides where both lungs were affected. In 3 per cent of the cases the vagus reflex and the lung disease were located on opposite sides of the body.

Of these cases, 109 had a family history of consumption, and additionally 3 had family history of epilepsy, 4 of alcoholism, and one of asthma.

It has been frequently observed that in consumptive patients who recovered or improved, the vagus reflex disappeared or became greatly ameliorated.

Of the 242 healthy persons examined, in 125 there was complete absence of family history of consumption and vagus reflex. The remaining 117 of this class presented either a vagus reflex or a family history of consumption.

Of these 117 cases, in 80 per cent. a vagus reflex and a family history of consumption co-existed in the same individual. In 12 per cent. a family history of consumption was unaccompanied by a vagus reflex. In 8 per cent. the vagus reflex was present without a family history of consumption. The intensity of the vagus reflex is largely governed by the proximity and the number of the family members who died of phthisis.

Of the 8 per cent. of cases in which a vagus reflex was found without a family history of consumption, there were 3 with an alcoholic and 2 with an insane ancestry.

The author considers that, by projecting the family history of the potential consumptive into the present, the vagus reflex not only foreshadows that which is not otherwise evident to the senses, but becomes an important factor in the prophylaxis and treatment of this disease.

On the Occurrence of Broadbent's Sign, by ALICE W. TALLANT, M.D. *Boston Medical and Surgical Journal*, October 27, 1904.

This sign was first described by Walter Broadbent in 1895, as a "visible retraction, synchronous with the cardiac systole, of the left back in the region of the eleventh and twelfth ribs," occurring in cases of adherent pericardium.

Dr. Tallant examined 130 hospital patients with reference to the presence or absence of this sign. In 25 cases she found marked retraction of one or more ribs, and in 20 others slight retraction of an interspace. None of these 45 cases showed any other sign of adherent pericardium, but 23 of them had various cardiac lesions and 11 others were very thin individuals. From this she concludes that retractions in the left back are much more common than is generally supposed, occurring in many cases of cardiac hypertrophy, and especially well seen in thin individuals.

Since the pericardium is, even under normal conditions, adherent to the central tendon of the diaphragm, it is conceivable that with each systole there is a slight full on the diaphragm. Under ordinary circumstances this is not marked enough to be transmitted to the points of attachment of the diaphragm to the chest wall, but if the heart is hypertrophied the full may be sufficient to be visible externally, while in a thin individual even a slight movement would be more easily perceived.

Ueber Lungensteine, by PROF. R. STEIN. *Deutsche Medizinische Wochenschrift*, September 22nd, 1904.

The expectoration of pulmonary calculi is a rather rare affection and one which has attracted considerable interest. The writer reports in detail three cases and reviews what is at present known in regard to the condition. The calculi are of varying sizes and all consist of carbonate and phosphate of lime with traces of magnesia. As to their mode of origin, they are usually calcareous concretions formed in tuberculous or bronchiectatic cavities, a piece of hardened secretion, blood-clot, or foreign body serving as a nucleus. They are also formed by the calcification of glands, lung tissue, or bronchial wall, which afterwards ulcerate through into the bronchi. The commonest primary factor is tuberculosis.

The symptoms vary as greatly as do those of calculi in other organs. They may be altogether latent, or by mechanical obstruction, irritation, or infection may cause severe symptoms. The commonest symptom is repeated homoptysis, caused by laceration of the bronchial mucosa or of the lung tissue. In certain cases this symptom, combined with the effects of secondary infection, causes a great resemblance to pulmonary tuberculosis, the so-called Pseudophthisis calculosa.

So far the diagnosis has only been made in cases where the calculi have been expectorated. Possibly, in the future, the X-rays may enable us to arrive at a diagnosis earlier. In such cases surgical interference would be the only indication.

On the Etiology of Fibrinous Bronchitis, by W. T. Ritchie, M.D. *The Edinburgh Medical Journal*, February, 1904.

The writer reports the results of a very complete examination of three large casts from a case of chronic fibrinous bronchitis. He finds the casts to consist of concentric laminæ, which are themselves composed of fibrils giving the reactions of fibrin. There was no reaction for mucin present. Between the laminæ were many leucocytes, mostly mononuclear forms, with a few polynuclears, and eosinophiles. The terminal branches were markedly spiral in arrangement. Careful bacteriological examination showed the constant presence of pneumococci both within and on the surface of the casts. In other similar cases, other micro-organisms have been found, and there is nothing to show that the disease is induced by a specific virus.

The writer inclines to the theory of Fränkel to explain these cases, viz., that, owing to a permanent denudation of a portion of the bronchial mucous membrane of its epithelium, there is a copious pouring out into the bronchi of coagulable fluid, which afterwards coagulates and forms a fibrinous cast.

On the Mechanism of Exophthalmos, by W. G. MacCallum and W. B. Cornell. *Medical News*, October 15th, 1904.

The above paper is the report of a series of experiments carried out with the object of ascertaining the exact mechanism of the exophthalmos which is produced in animals by circulatory disturbance or by stimulation of the cervical sympathetic. The exophthalmos was recorded by means of a lever one end of which was attached to the cornea of the animal, while the other rested on a revolving drum.

In brief, the writers have established the following conclusions:—Any obstruction to the outflow of blood from the veins of the orbit produces at once exophthalmos, relieved by the establishment of a collateral circulation. This is completed so slowly that in the meantime

the orbital tissues become very œdematous thus adding to the exophthalmos.

Entirely independent of any circulatory changes is the exophthalmos produced directly by the stimulation of the cervical sympathetic nerve. This protrusion is due to the peristaltic contraction of the orbital muscle of Müller. This exophthalmos can be kept up for at least 8 or 10 hours by slightly increasing the stimulus.

To quote the writers, "from these experiments we can draw no certain conclusions as to the mechanism of the exophthalmos in Grave's disease, but the possibilities are perhaps more closely defined."

H. B. C.

SINNHUBER. "The Relation of the Thymus to Metabolism." *Zeitschrift für klinische Medicin*, Vol. 54, Nos. 1 and 2.

Sinnhuber has conducted a series of investigations on this subject, and comes to the following conclusions:—The thymus is not an organ important to life in the post-embryonal period. The extirpation of the gland is without influence on the excretion of lime, and the thymus has no causal connexion with rachitis in so far as this is concerned with the question of the intake and output of lime. When the gland is atrophied or hypertrophied in this disease neither the rachitis nor the thyroid lesion is either primary or secondary; both are the result of an underlying etiological process. The nature of this underlying process is associated with the lymphatic diathesis, and this is usually the result of an interference with intestinal activity caused by insufficient or unsuitable nourishment. In feeding experiments the consumption of thymus gland is without appreciable effect on the excretion of lime, but the nitrogen output is increased. Large doses of thyroidin markedly increase the excretion of lime as well as the nitrogen output, which is even in excess of the intake.

H. M. KING. "On the Healing of Tuberculosis." *Medical Record*, January 7, 1905.

H. M. King says that the first onset of tuberculous infection, in many cases, if not usually, antedates the appearance of clinical symptoms by months or even years. Careful search into the previous history of such patients reveals slight illnesses of various sorts, such, for example, as malaria or grip, which the results of autopsy work make it appear are probably evidences of systematic reaction to tuberculous infection. Two cases of this type are described, and the author states the following general propositions:—(1) It is probable that the initial lesion follow-

ing a tuberculous infection is often obscure in its clinical manifestations, and frequently escapes identification. (2) There is nearly always a prompt and very often successful tendency on the part of the organism to a more or less complete repair followed by an interval of apparent health. (3) Following this interval, which may extend into a period of years, there is a strong tendency to relapse. (4) What is in reality a recrudescence of an arrested lesion is very frequently mistaken for an initial onset. (5) Whatever may be the facts in an individual case, the safest and most practical policy lies in regarding every apparent recovery from tuberculosis as merely an arrest of the disease, brought about by an acquired immunity which suitable conditions are very prone to destroy. The author has found that the generally accepted prognostic significance of a diazo-reaction in tuberculosis has application chiefly, if not solely, to the last stages of the disease, and it may be temporarily present even in early acute manifestations without necessarily indicating an unfavourable termination. A slight leucocytosis is present much earlier in the disease than is usually believed.

R. L. Sutton. "The Diseases of the Isthmian Canal Zone." *Medical Record,* January 14, 1905.

R. L. Sutton gives a résumé of the most prominent features of the various tropical and other diseases commonly encountered in the canal region. The list includes malaria, dengue, beriberi, infection with intestinal parasites of numerous species, lesions due to the bites of various insects, heat exhaustion and sunstroke, acute and chronic rheumatism, dysentery, leprosy, smallpox, and yellow fever. The latter is not epidemic at present in this region, and sporadic cases are rarely seen. Malaria is more widespread than any other affection, and the esivo-autumnal form is the commonest variety. Quartan infections are not observed. Dengue is the disease which most frequently attacks the newcomer. and the local form is peculiar to the unreliability of the primary and terminal eruptions, which do not possess the diagnostic value usually accorded to them, as they are absent in the majority of cases. Blood counts show an early leucopenia with a normal differential count, which is later followed by eosinophilia after the second rise and lymphocytosis as convalescence begins. Beriberi assumes both the tropical and paraplegic forms, and especially affects the Chinese contingent, although the natives do not entirely escape. Uncinariasis is the most important and dangerous of the intestinal infections, and may cause extreme degrees of anæmia with hemoglobin as low as 20 per cent. Eosinophilia is very high, seldom being below 20 per cent., and in one instance being over 65 per cent. Castor oil, followed by three

20 gr. doses of thymol, at two hours intervals, cures most cases. Dysentery, both of the bacillary and amebic type, is much in evidence among the natives, but the troops suffer little from it, owing to the careful guarding of the water supplies. Hepatic abscess is seldom encountered.

Ira S. Wile, M.D "Preliminary Notice of a New and Simplified Double Stain for Bacillus Tuberculosis." *N.Y. Med. Journ.* and *Phila. Med. Journal,* January 28, 1905.

Instead of using Gabbet's solution or decolourizing with acid alcohol and counterstaining with Bismarck brown, the smear is drained of excess of carbol fuchsin stain, washed in distilled water, and then plunged repeatedly into sodium hypochlorite until the slide presents a uniform brown appearance. The slide is washed in distilled water, dried between blotting paper, and examined. The bacilli tuberculosis appear as red rods upon a brown field. Other bacterial forms, with the possible exception of B. *smegmæ* and B. *lepræ*, are brown in colour.

OPHTHALMOLOGY.

UNDER THE CHARGE OF FRANK BULLER

Reber. "Relation of Diseases of the Eye to those of the Teeth." *Ophthalmology,* October, 1904.

There is rather a close connection between the eye and the teeth. The mucous membrane of the mouth is continuous with the conjunctiva through the nasal duct. The periosteum of the orbit extends to the dental edge of the upper jaw. Pus in the antrum or from carious teeth may burrow into the orbit. The angular artery and certain veins run almost directly from one region to the other. The nervous supply is the same, viz., the fifth and the sympathetic.

Reber divides the ocular lesions associated with dental trouble into:—

1st.—Purely functional. No organic change.

2nd.—Functiono-inflammatory, in which there is true inflammation of the ocular structures arising from dental irritation.

3rd.—There may be true inflammatory changes arising by direct extension of the process from one region to the other by direct continuity or by metastasis.

4th.—Dental neuralgia can, on the other hand, be secondary to ocular disease.

In the first group many examples are reported; from transient mydriasis to complete blindness without any visible change. The association of amaurosis or amblyopia with alveolar abscess or carious

teeth is common, as is also paralysis of accommodation. Reber mentions a rare case of his own, due to traumatic hysteria, secondary to the extraction of a tooth where the eye symptoms changed from time to time. Paralysis of the extra ocular muscles, monocular diplopia, micropsia and spasm are also reported.

In the second group there is no direct continuity, but it would appear as if there were a reflex inflammation set up in the eye. Glaucoma is frequently reported in this connexion, and the authorities agree that the irritation of a dental branch of the fifth nerve can produce or superinduce glaucoma. Other lesions reported in this category are neuroparalytic kerotitis, corneal ulcers, irido-choroiditis and zonular cataract, but these are insufficiently verified.

The members of the third group are the best witnesses for the interdependence of the eyes and teeth; they are demonstrable on purely anatomical grounds. Œdema and cellulitis of the cheek and of the lids is quite common in alveolar periostitis and pyorrhea. Alveolar inflammation not infrequently involves by extension the antrum of Highmore, the periosteum of the lower orbital margin and the orbit itself. Exophthalmus and degeneration of the optic nerve and purulent destruction of the eye are reported by Hirsch. The inflammation spreads by the veins setting up thrombo-phlebitis, exophthalmus and finally abscess of the orbit. After the removal of a carious tooth, the orbital abscess developed, which later set up a fatal meningitis. Fatal septic thrombosis of cavernous sinus following the extraction of one of the black molars has been reported. The patient presented all the symptoms of metastatic orbital abscess, along with general septicæmia, of which he died three weeks after the extraction. In not a few cases orbital abscess is developed after a gum boil, which later runs on to meningitis and death. There is a close relation between lachrymal and alveolar fistula.

Parinaud reports cases in which the pus cavity opened just above the lower end of the lachrymal sac, and led to a mistaken diagnosis of fistula of the sac. Caries of the lower orbital margin may be simulated by an alveolar fistula at the outer half of the lower edge of the orbit. The ocular symptoms sometimes would appear out of all proportion to the apparent insignificance of the dental trouble.

Lastly, in the fourth group dental neuralgia may be secondary to ocular disease, the pain extending from the eye to the teeth, as in irido-cyclitis and sometimes glaucoma. Neuschuler reports cases where the straining of accommodation in errors of refraction occasioned intense dental neuralgia. Reber notes a case where a two-degree prism overcame a muscular defect, and effected a cure of severe dental neuralgia, and he suggests that it is well to examine closely the teeth in all cases

of inexplicable paralysis of accommodation. Another point is that from two to ten days is the time wherein infection from the alveolar wound is most likely to take place. The hysterical infection may occur at almost any time within six months.

A diseased tooth may express itself in almost any part of the body, while, on the other hand, disease in any part of the body may express itself in discomfort associated with the teeth.

GUNN. "Retro-Ocular Neuritis." *British Medical Journal,* November 12th, 1904.

This is the report of an extensive discussion which occurred at the last meeting of the British Medical Association, at which Mr. Gunn read the preliminary paper. Mr. Gunn in his paper gave the synopsis of the characteristic symptoms of this disease. It may be monocular or binocular. There is a rapid loss of vision coming on in from one to three days, sometimes a little longer; there is a central scotoma, and but rarely other contraction of the field; the pupil is sluggish; there is an absence of fundal changes early in the onset, but later slight papililtis or optic atrophy may develop, the light sense is defective, and the distinguishing feature is rapid failure of vision in contrast to the length of time true papillitis would exist without this failure; on the other hand, the failure is not so sudden as in embolism or thrombosis. There is generally recovery of vision in six weeks, but this sometimes fails to occur. In many cases pain at the back of the eye is complained of, and when deep seated the prognosis is less favourable, as it may indicate gross changes at the optic canal. Pain is often caused by pressing the globe backwards.

The inflammation may extend from the neighbouring structures, e.g, orbital cellulitis, periostitis, exposure to cold seems to favour it, and in many cases gouty or rheumatic scleritis extends to the nerve at the point where it joins the sclera. Syphilitic or tuberculous deposits in the optic nerve are the cause of rapid changes in the nerve. In this latter group may be included the so-called primary cases, e.g., those in insular sclerosis and those ascribed to influenza and gout; in the former recurrences are very likely to occur, and women are more frequently affected in primary cases than men.

Mr. Berry insisted on the importance of defective light sense as a diagnostic feature.

Dr. Uhthoff considers the changes in the optic nerve can result from an interstitial process, which can attack the optic nerve trunk in a circumscript portion of its course, and be followed by an ascending or descending degeneration. He also considers it doubtful if the ganglion

cells of the central portion of the retina are the seats of the primary disease with the secondary degeneration of the nerves and fibres in the trunk.

As to the cause, lues is accountable for the greater number, hereditary tendency, multiple sclerosis, anomalies of menstruation, cold, loss of blood, disorders of neighbouring cavities, periostitis of the orbit, influenza, typhoid, malaria, are also factors.

Dr. Oliver mentioned two family trees, one extending over more than 250 years and including more than 150 cases.

Dr. Hill Griffith considers that the cause in some cases is inflammation of the sclerotic around the entrance of the optic nerve in rheumatic individuals.

Finally, one or two cases are reported where the attack had followed sudden change from heat to cold, and might be due to the shock.

HINSHELWOOD. "Word-Blindness." *British Medical Journal*, November 12th, 1904.

Dr. Hinshelwood's article deals with the history of two very interesting cases of word blindness. In the second one it was associated with homonymous hemianopsia, and the post-mortem examination is appended. The first case was that of a boy, and the treatment which Hinshelwood advised was short reading lessons every day, in this manner gradually training the right side of the brain. The child in question had been considered very stupid in his reading in school, although remarkably smart in his mathematics, etc. The difficulty was really that of storing up and retaining the visual memories of words. The patient retained the memory for letters, and could read a word if allowed either to spell it out aloud letter by letter, or to move the lips silently or to trace the form of the letters with the hand.

The second case was that of a French teacher, 58 years of age, in whom the onset of the blindness was very sudden, and lasted until his death, nine years later. There was also right homonymous hemianopsia. The post-mortem examination revealed a large cyst, limited as follows:—Superiorly by the calcarine fissure extending forward to the depression over the posterior part of the hyppocampal gyrus over which the strand of shrunken membrane stretched in the direction of the crura. Posterior limit just short of the occipital pole, being cut off from it by a somewhat deep chescentic fissure, corresponding to the posterior limit of the calcarine fissure. Externally and inferiorly the margin of the lesion corresponded with the posterior part of the third temporal sulcus. Anteriorly and inferiorly the margin ran obliquely towards the hippocampal gyrus. The cortex was shrunken and the pia

closely adherent to the altered surfaces. "Brocas" convolution and the angular gyrus were intact, but the latter was notably simpler in form than the right gyrus. The lesion would point to acute softening of the brain consequent upon thrombosis of a branch of the posterior cerebral artery, there being marked general vascular degeneration The cavity was continuous with the posterior horn of the lateral ventricle, and the visual centre in this case lay distinctly below the level of the calcarine fissure, the cuneus being intact except at the calcarine fissure. The left angular gyrus is the area in which is deposited the visual memory of words and letters, and the destruction of this cortex in such a position as to divide the fibres which pass to the left angular gyrus from the calcarine fissure in both occiptal lobes must involve the radiation of Gratiolet, causing right homonymous hemianopsia.

ONODI. "Amblyopia and Amaurosis of Nasal Origin induced by Disease of the Posterior Accessory Sinuses." *British Medical Journal,* November 5th, 1904.

This extremely interesting article on a comparatively obscure subject deals largely with the anatomical relations of the nasal and ocular cavities. As to the anatomical relations, Onodi states:—

1st. The optic canal can be formed on both sides by the sphenoid cavities.

2nd. The optic canal may be connected on both sides with the posterior ethmoid cells only.

3rd. The optic canal may form on one side the sphenoid cavity, on the other the posterior ethmoid itself.

4th. The optic canal on the one side may be related either with the sphenoid cavity or with the posterior ethmoid cell.

5th. The optic canal may be related on one side both with the sphenoid and with the posterior ethmoid cell.

6th. The optic canal may be related either with the sphenoid or with the posterior ethmoid cavity.

Optic neuritis is rarely seen in inflammation of the frontal sinus, more often in inflammation of the ethmoid or maxillary, but it is produced, if at all, by inflammation of the sphenoid sinus, and it is characterized by being unilateral. The numerous minute blood vessels perforating the bone form the real means of communicating inflammation by thrombosis through the sphenoid or ethmoid; at the same time it is remarkable how many cases of pure inflammation of the sphenoid and ethmoid, with necrosis of the same, have occurred without setting up optic neuritis, although the lesion may be in absolute contact with the nerve.

The chiasma is often also affected, as it immediately overlays these

cavities. The removal of adenoids and hypertrophies of the turbinated bodies of the nose has relieved and sometimes cured neuritis. Bitemporal hemianopsia has been reported. Of course, tumours and traumata (fractures) can by their presence cause neuritis or atrophy.

The lymph vessels and veins are the most important methods of comcells, and which would conduct inflammation or thrombosis, either into munication. Onodi mentions one semi-canal leading to the ethmoidal cells, and which would conduct inflammation or thrombosis, either into the anterior frontal cavity or to the roof of the orbit or the ethmoid bone. The anterior ethmoid artery, with its vein and nerve, runs in this canal, therefore the connexion of the ethmoidal veins with the dural venus plexus and with the opthalmic plexus can conduct by virtue of thrombosis, inflammation in these two directions and also into the orbit and into the cavernous sinus. There may also be defects in the walls of the sphenoid, which would allow of the direct spread of inflammation.

J. W. STIRLING.

Society Proceedings.

LA SOCIETE MEDICALE DE MONTREAL.

Meeting of January 10th, 1905.

Dr. O. F. Mercier, President.

The first meeting of the year 1905 was attended by an unusually large number of members. After the reading of the last meeting's proceedings and their adoption, Dr. O. F. Mercier presented a living case, a female patient, aged 47, suffering from an arterio-venous aneurysm of the wrist, which appeared spontaneously without any apparent traumatism.

The next item was the report of a case of cerebral œdema, with dropsy of the lateral ventricles, by Dr. A. LeSage. Syphilis was suspected and treated, but treatment did not give the expected results. The patient was seen by Dr. A. A. Foucher, who diagnosed œdema of the optic nerve, and upon consultation, lumbar puncture (Quincke's) was resorted to with almost immediate results; 12 c.c. of bright cerebrospinal fluid were removed. The occular symptoms rapidly disappeared, and a week after the puncture the patient was dismissed cured.

Dr. Foucher carefully discussed the case, and insisted upon the great aid to be derived from an ophthalmoscopic examination in cerebral affections.

The third item was the report of a case of repeated intestinal obstruction caused by invagination. Operation: recovery. The patient was

a girl of 18, of rather unhealthy appearance, who entered the Notre Dame Hospital, May, 1904, presenting symptoms of intestinal obstruction. This diagnosis seemed rather doubtful, similar attacks being recorded in the patient's previous history. Medical treatment sufficed in a few days to bring about subsidence of the worst symptoms; tympanites having disappeared, a mass was detected in the right illiac fossa, and surgical interference was proposed. Upon operation this mass proved to be an old-standing invagination. The bowel involved was resected, and the patient made an uninterrupted recovery, leaving the hospital four weeks after the operation cured, and having gained several pounds in weight.

The meeting closed by the reading of a letter from the Medical Society of the District of Ottawa inviting a delegate from La Societé Médicale de Montréal" to attend its meeting in Buckingham. After discussion, it was decided to send two delegates, their choice being left with the council of the Association.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The seventh regular meeting of the Society was held January 6th, Dr. J. A. MacDonald, President, in the Chair.

F. R. England, M. D., exhibited a living case of fracture of the skull with the following notes on the case:

The patient is a young man, 19 years of age, who was admitted to the Western General Hospital, November 24th. While at work a brick fell a distance of 50 feet on the top of the patient's head; he was knocked down but did not lose consciousness and was perfectly conscious on admission to the hospital. There was slight hæmorrhage from the scalp wound which was easily controlled by pressure; the right arm and leg were completely paralyzed ; the pupils were equal and normal in size reacting to light though somewhat sluggishly. There was no vomiting, no collapse. The patient arrived at the hospital at 12 noon and was operated on that night. Before the operation he regained power in his right arm but the leg remained absolutely paralyzed. The impact was at a point about mid-way between the occipital protuberance and the nasal-spine a little to the left of the middle line and locating pretty well the upper part of the left fissure of Rolando, explaining the paralysis in the right leg. The wound in the scalp was stellate and at the operation was enlarged freely to expose the skull, which had a somewhat remarkable appearance in that a round piece of bone about an inch in diameter had been depressed sufficiently to expose the diploe.

The disk of bone was elevated with a chisel and removed, the opening in the skull was considerably enlarged with Rongeur forceps and all loose spicules of bone from the inner table removed.

Pulsation of the brain appeared immediately and apparently no hæmorrhage had occurred into the brain substance; the meninges, therefore, were not opened. After thoroughly cleansing the parts the scalp wound was closed, a small coil of rubber tissue was introduced at the lower angle of the wound for drainage and a dry dressing applied. At the end of the operation, when the last sutures were being put into the scalp, the patient's condition suddenly became very poor, he looked pale, the pulse was weak and rapid, respiration shallow and irregular. A hypodermic of strychnine, however, revived him. Convalescence was uninterrupted. The day following the operation there was slight return of movement in the muscles of the thigh. Two days later the patient complained of involuntary extension of the foot. The drain was removed 48 hours after the operation and the stitches on Nov. 31st, six days after operation, when the wound was found perfectly healed, the patient could move his thigh freely but could not move his ankle or toes to any extent. On December 14th he was allowed up and since then has been gradually gaining power in the leg and can now walk very well though the toes and ankle are still weak. The pulsation now seen in the head appeared immediately after removal of the piece of bone.

Dr. England also showed two diagrams illustrating how the point of impact corresponded to the leg centre.

Dr. RICHARDSON showed a specimen of sarcoma of the omentum taken from a woman 40 years of age. Dr. England gave the following account of the case. The patient had been 14 years married and had no children. About two years previous to coming under observation she began to have sudden severe attacks of pain in the epigastrium, so severe as to oblige her to remain in bed for a day or two. The pain would gradually wear off but there was usually vomiting all next day. It was also noticed that the pain would come on before the menstrual period, though there were attacks of vomiting independent of this. During one of these attacks, about two years ago, the patient noted a small lump in the abdomen to the right of the middle line and she thinks it has grown since then. On entering hospital she was found to be a well nourished woman, good colour, good appetite, and no pain on admission. There was no history of loss of flesh. Physical examination of the abdomen showed that it was prominent, with thick fatty walls. On palpation a firm, smooth, globular mass about the size of a fœtal head could be felt in the right hypochondrium; only slightly sensitive, freely movable and could be pushed into the epigastrium and into the left hypochondrium but not down into the pelvis. Vaginal examination was negative. The tumour could be grasped by placing one hand in the right loin and the other on the abdomen, Percussion note tympanitic over whole abdomen, but less marked over tumour region. This peculiar movable tumour giving a history of

two years with gastric symptoms led me to consider the case as probably one of enlarged movable kidney. I could exclude any condition of the ovary for the mass could not be pushed into the pelvis, neither did it seem to be connected with the gall bladder and as it could be so readily pushed into the loin, I favoured an enlarged movable kidney as offering the most likely explanation. The diagnosis, however, was not at all certain; examination of the urine was negative, though the patient stated that she had had bladder symptoms and on one occasion had passed blood in her urine. Not wishing to open the abdominal cavity unnecessarily, I decided to begin the operation by exploring the right kidney, through the usual oblique lumbar incision; a normal kidney in its normal position was found; the wound was immediately closed. Cœliotomy was then performed, median incision, which, in order to effect delivery of the tumour, it was necessary to prolong above the umbilicus. The tumour-was smooth, globular, somewhat larger than an orange and found imbedded between the layers of the gastro-colic omentum. It was firmly attached to the greater curvature of the stomach, surrounded and covered with numerous large ill-developed veins which bled freely on the slightest provocation. The vessels were ligated and the growth removed without special difficulty. The most interesting features of this case, are, the situation of the tumour, the long duration and obscure symptoms and the differential diagnosis.

I asked Dr. Adami to see the specimen a few hours after its removal and he said that it certainly looked like kidney tissue. Microscopically it was found to be a cellular growth which was said to be sarcoma. This patient made an uninterrupted recovery and left the hospital in three weeks after operation.

Dr. Richardson showed the specimen and said that Dr. Klotz had made sections of this tumour and reported it to be a mixed-cell sarcoma.

Dr. W. F. Hamilton: I would like to ask Dr. England concerning the position of the stomach in this case, whether it was dilated by the weight of the tumour and in what proximity the tumour was attached to it.

Dr. Smith: I would like to ask Dr. England if he has not found it easier to remove tumours of the kidney through the abdomen rather than through the back. I have come to that conclusion after having had some experience of the two methods; in one case a large tumour like an ovarian cyst was exceedingly easily removed in this way.

Dr. England: I would like to ask Dr. Klotz if he has any views with regard to the fatty substance in this growth, whether it might not have begun as a fatty tumour and later taken on a malignant condition. In answer to Dr. Hamilton, regarding dilatation of the stomach, I did not discover this either previous to or at operation, the attachment of the growth to the stomach was very intimate but it did not arise from the

stomach. It was enclosed in the folds of the great omentum and looked like a cyst which I really thought it was until it was removed and cut into. In answer to Dr. Smith with regard to the method of attacking the kidney, I felt from the history of the case that this was probably an enlarged movable kidney and my intention was not to remove it but to anchor it. If the kidney is septic I think it is probably safer to attack it retroperitoneally.

Dr. E. W. ARCHIBALD: After seeing this tumour, the surface presents to me two appearances, one of whitish, fatty and the other of meatlike appearance which looks a great deal like kidney. I would like to know whether the sections shown were taken from the white area or the pinkish area and whether, if from both, if they show any difference microscopically.

Dr. O. KLOTZ: When first seen uncut the tumour had two characters, first a distinct encapsulation of the tumour. In the second place it was very soft in parts and others more meaty. One section is from the meaty portion and is very dense, the other is from the softer area; I do not think a section of the white part was made. There is no distinction between the more dense and the softer areas other than that the tissue seemed looser in the soft portion. The whitish areas showed spindle cells and in between the cells was a great deal of hyaline material which appears fatty on microscopical appearance but no fat was found whatever. The tumour is very vascular but neither the spindle cells nor the tumour cells show any arrangements of the blood vessels and in fact the tumour does not give any idea of the tissue from which it originated. It may be a growth from the endothelial cells of the peritoneum?

Dr. RIDLEY MACKENZIE reported a case of septico-pyæmia, the specific organism being the staphylococcus. The report of this case appears at page 117.

Dr. F. G. FINLEY: It seems to me in the first place it must be a very unusual occurrence for a malignant endocarditis to start as a primary focus in the tube, then again the absence of murmur is a very remarkable fact. It is a well recognized fact that murmurs do not occur in certain cases of malignant endocarditis and I can recall one or two in which they were absent. One case of a woman recovering from pneumonia began to have an elevated temperature and rigor. The condition was carefully watched and till the day of her death murmurs did not develop. As far as the resemblance of this septic case to typhoid is concerned it is extremely close. Only quite recently a young lad was sent in to the hospital from the country as a typhoid case; the only suspicious circumstance was a little swelling in one shoulder where a little pus pocket developed and it turned out to be a case of pyæmia. In these sus-

picious cases the Widal test should be relied upon to clear up the diagnosis.

Dr. W. F. Hamilton: With regard to the absence of the murmur it has been shown that even in marked endocarditis of a chronic type it is often obliterated when the heart reaches 120 or 140; this heart reached 160 and therefore with great weakness of the cardiac muscle it might not have been manifest, or there was no time for it to occur. A living case of staphylococcus infection which I presented here some 18 months ago was a young man who came into the hospital with probably typhoid fever. He developed pleurisy of both sides and had also ascites. With the aid of Dr. Bruère we made cultures in which the staphylococcus was found in rich abundance. He made a very good recovery and was able to work. Another question suggested here is in respect to the gall bladder. While Dr. Gillies' report is most correct, I failed to notice any remarks with regard to the gall bladder. It has been noticed that such an infection is often connected with conditions in the gall bladder.

Dr. Mackenzie: I have not looked up the connexion between pus tubes and endocarditis and I do not think a blood count was made. I think with Dr. Hamilton that the rapid action of the heart would account for the absence of the murmurs.

Dr. Gillies: I did not mention the liver or gall bladder because they were perfectly normal.

Dr. A. Lapthorn Smith reported a case of Dermoid Cyst with Ascities: Ever since Professor Osler's short article appeared in the *Philadelphia Medical Journal,* 24th. May 1902, on this subject, I have been interested in it, for I had almost come to the conclusion that the presence of free fluid in the abdominal cavity was an indication that the tumour accompanying and causing it was malignant. In thinking over my own experience of ascities with tumours I can remember about twenty in which some growth was found which proved to be malignant or on the border line of malignancy. The majority of them were papillomas of the ovary which I looked upon as very frequently malignant, although the fact that many of the women recovered and remained well for many years after operation is somewhat, but not conclusively, against the claim that they were malignant. One case impressed me greatly, a woman to whom I was called in great haste, whom I found sitting up in a chair and gasping for breath. She was already cyanosed, so a very small trochar was at once introduced, and nearly two pails of fluid were removed. This not only gave her great relief but also enabled me to discover two large solid tumours, each much larger than a cocoa nut. A few days later I removed these large solid tumours of the ovary by abdominal incision. But when I tried to draw down the omentum before closing the incision, I found it difficult to locate it and quite impossible to draw it down. In fact it

was represented by a mere fringe like a piece of burnt leather, about an inch and a half wide. The pathological examination proved that it was a carcinoma of the ovary and, I have no doubt that the liver was also affected by the same disease, for the woman, after making a speedy recovery from the operation, died three months later without a return of the ascites. Then again in operating for papilloma of the ovary I have found in some cases, ascites, and very often an inoperable condition, the cases being malignant and the patients dying a few months afterwards, while in others there was no shrinking of the omentum and no ascites, and those patients are still alive after many years. When we come to seek for an explanation of the presence of the fluid it is quite difficult to come to any conclusion. Is the ascites due to mechanical obstruction of the large veins such as we get in enlargement of the liver, or is it due to irritation of the peritoneum by the excretions of the ovary? Why do we get ascites from solid tumours of the ovary and rarely in liquid tumours of the same size? I think we may have ascites caused by an abdominal tumour in one or both of two ways; first, the tumour may be solid enough and free enough to rest upon the inferior vena cava and cause obstruction or back pressure sufficient to cause serum to exude through the walls of the veins, or if the tumour is malignant, it quickly affects the liver by metastasis and blocks the portal circulation, as well as the inferior vena cava passing behind it, and causes back pressure and exudation of serum from both the veins of the stomach and intestines, as well as from the inferior vena cava and its branches. This is the explanation of the ascites in the case mentioned by Dr. Osler, in which there was a solid ovarian tumour with twisted pedicle allowing blood to be pumped into it, but impeding the outflow so that the serum was forced through the walls of the veins.

The other explanation is that there is some irritant poison given off by a diseased ovary which either increases the secretion of the peritoneal surfaces, or closes the mouths of the absorbents, which, under normal conditions, are able to carry off large quantities of serum in a few hours; for instance two gallons of normal salt solution which are left in the abdomen after the removal of a large tumour or the sudden disappearance of a large thin-walled parovarian cyst by rupture, the liquid in both cases being quickly absorbed and excreted by the kidneys. As many of these cases have albumin in their urine, their physician is misled into thinking that the dropsy is of renal origin and are therefore opposed to operative measures. But I have seen the albumin disappear in so many of these after the removal of the tumour, that I never allow the presence of albumin in the urine to prevent me from removing a tumour from the abdomen. The preliminary tapping two days before the operation had

the double advantage of revealing solid bodies which could not otherwise be discovered, and it also prevents collapse during the operation, due to hæmorrhage into the azygos and other veins caused by the sudden withdrawal of their accustomed support.

The Dermoid cyst of the ovary which I present this evening was removed on the 26th November, from Mrs. J. H., 48 years of age, a native of Newfoundland. Her previous history was good, menstruation having commenced at 14, normal in character and stopping at 38. She had had 8 children and two miscarriages. There was no albumin in the urine. She had first noticed the tumour about seven years ago when it was about the size of an egg, since which time it had gradually increased until it was as large as an adult head. By palpation the whole abdomen was found to be full of fluid, but on deep pressure the hand came upon a solid tumour which was freely movable, occupying the middle of the abdomen. On opening the abdomen about a gallon of straw coloured serum escaped or was sponged away, and then the tumour could be seen to be a tensely filled cyst with the omentum adherent to it for a distance of four or five inches. This was ligatured in segments, and the cyst partly emptied with a trochar after which it was easily removed and the large pedicle tied in several places. On the back of the tumour, opposite the part where it would be lying on the promontory of the sacrum, there were four or five white nodules which I had never seen before on a dermoid cyst and I thought that these might have been the beginning of malignant degeneration to which dermoid cysts are liable, but both Dr. Richardson and Dr. Gurd, who made microscopical examination of these nodules, pronounced them to consist of fibrous tissue containing ill-defined cells, but not apparently malignant. The patient made a good recovery and went home in four weeks.

Dr. C. A. Richardson exhibited the pathological specimen from this case and reported that on section through the capsule of the tumour nothing but fibrous tissue was noted.

Dr. W. F. Hamilton, read a paper upon Lead-Poisoning with summary of 30 cases.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The sixth regular meeting of the Society was held December 16th, Dr. J. A. Macdonald, President, in the chair. The programme for the evening was a discussion on Actinomycosis, which was opened by Dr. James Bell. Drs. A. G. Nichols and C. B. Keenan discussed the bacteriology, Dr. W. W. Chipman some clinical aspects of the condition in gynæcology, Dr. J. G. Adami the nomenclature and classification, and Dr. W. F. Hamilton the condition from a medical point of view. This discussion is reported fully at page 81 *et seq.*

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXXIV. MARCH, 1905. No. 3.

PRESSURE PARALYSIS.

BY

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Gentlemen:—So recently as November 23rd, I was requested by Dr. C. A. Pease, assistant division surgeon of the Rutland Railroad Company, to come to Burlington and deliver an address on December 15th to the surgeons of the Railroad Company. This invitation I at once accepted, feeling honoured by the request. The subject I have decided to talk about is Pressure Paralysis, and I shall present it under the following heads:—

First—Cerebral pressure, one case.

Second—Spinal cord pressure, one case.

Third—Corda equina pressure, one case.

Fourth—Paralysis of the brachial plexus in adults, seven cases.

Fifth—Paralysis of the brachial plexus in children, six cases.

In the present paper I shall give only a brief description of the thirteen cases of brachial palsies in adults and children, stating mainly the essential features, and shall confine myself chiefly to the three groups just mentioned. In a future publication I shall take up the cases of brachial paralysis more in detail.

The clinical symptoms of pressure paralysis frequently follow railway accidents, and are also not uncommon in general practice. So for that reason I think this subject appropriate to lay before you, who are not only railroad surgeons but general practitioners as well.

Pressure paralysis is a very wide term, but what I intend to speak about more particularly to-night is the result of pressure on the central nervous system, as in cases of depressed fracture, fracture and dislocation of the spinal column, and, lastly, pressure on the peripheral nerves from injury.

I think that it would be just as well to make a hasty sketch of the central nervous system before taking up the subject proper. The central nervous system is made up of motor and sensory neurones. A

neurone consists of a cell body and processes (dendrite and axone). In the brain proper we have, in addition to the motor and sensory neurones, other neurones which make up that part of the nervous system, in which is situated the higher mental faculties and the special senses, such as vision, taste and touch.

Let us first take up the *neurones for motion.* It is seen that there are two distinct systems of neurones, one called the upper the other the lower motor. The cell bodies of the upper motor neurone are situated in the motor area of the cortex round about the fissure of Rolando, their axones or nerve fibres penetrating inwards to the centre of the brain, pass down the internal capsule through the pes, pons and medulla, reach the cord, and end by aborization round about the cell bodies in the anterior horns, either in the cervical, dorsal or lumbar sacral regions of the cord. Some only reach the floor of the fourth ventricle, and do not enter the cord. The cell bodies of the lower motor neurones lie in the third and fourth ventricles and in the anterior horns in the whole extent of the cord. Their axones passing from the brain form the cranial nerves, while the axones of the cell bodies in the anterior horns pass out at the anterior surface of the cord, and are there called the anterior roots; from there outwards in connection with the sensory neurones they constitute the peripheral nerves. Now, let us take up the position of the *sensory neurones.* Like the motor, we have two systems, the upper and lower. The cell bodies of the lower sensory neurones lie in the ganglia of the posterior roots of the cord. Their dendrites stretch from the skin up to the cord, and along with the lower motor axones make up the peripheral nerves. The axones of the lower sensory neurones, after leaving the ganglia, enter the cord at the posterior roots, and, through some processes, arborize around the cells in the posterior horns of the gray matter; some go to the anterior horns of the gray matter, while others ascend in the posterior columns to the medulla, and there ramify around the cell bodies of the upper sensory neurone. The axones of the upper sensory neurones ascend from these upwards to the brain by way of the fillet.

I have just mentioned that there are two systems in the motor and sensory neurones, but in all likelihood there are relays of neurones, interspersed between the periphery and the cerebral cortex, as, for instance, some of the upper sensory neurones pass first to the cerebellum, and from there on to the cerebrum. But for all intents and purposes required in this lecture, or for knowledge to understand the clinical signs of involvement of the nervous system, this will suffice.

Now let us see what are the functions of the upper motor neurones.

Firstly, motion; secondly, inhibitory action or controlling influence over the lower motor neurones. Injury, let us say of the upper motor neurones of the leg-centre in the cerebral cortex, is followed by paresis or paralysis of the leg, and following this, due to the inhibitory control being removed from the lower motor neurone, the tone in the muscle is greatly increased, and this is shown, clinically, by the presence of a rigid or spastic gait. But the tone of the muscle, as already said, being increased naturally, one finds that the deep reflexes are all increased, this being really a mechanical condition, and not due to a true reflex, which will be discussed later on. There is no alteration in the muscles to faradic and galvanic current. Injury or destruction of the lower motor neurone is followed by paresis or paralysis of the leg. On account of the lower motor neurone being the trophic centre for the muscles, a flaccid condition is present, this being an expression of lack of tone. This condition is soon followed by an atrophy of the muscle on account of its trophic centre being destroyed, and along with this we find marked lessening or loss to the faradic current and typical galvanic alteration or degeneration. As we have here a flaccid condition, due to loss of tone, we find that the deep reflexes are lost.

Let us now take up the lower sensory neurone. Destruction or injury of the lower sensory neurone produces a paresis or paralysis of sensation in the leg, giving clinical signs of either objective or subjective sensory disturbances. Following this, certain loss of tone occurs, and the deep reflexes are lessened or lost. There is no alteration to faradic or galvanic irritability in the muscles. Injury or destruction of the upper sensory neurone produces exactly the same symptoms as the lower sensory with this exception, that the deep reflexes are normal, while in the lower sensory neurone we saw that they were absent.

I might here stop for a moment and discuss particularly the ætiology of the deep reflexes, such as the knee jerk, elbow jerk and Achilles' reflex. To obtain a reflex in the lower animals, and even in the monkey, it is necessary for the lower motor and sensory neurones to be intact, so that when tapping the patellar tendon the impulse or stimulus travels up the lower sensory neurones and forward to the cell body of the lower motor neurones situated in the anterior horns. From there the impulse is carried down to the muscle, with the result that we get a knee jerk. In man it is not the same. I will try to explain in as brief a way as possible wherein lies the difference. We know that the lower motor neurone supplies tone to the muscle. The amount of that tone is regulated by the upper motor neurone. Let us say, for the sake of argument, that the normal lower motor neurone gives out 100 per cent. of tone, and, to use a mechanical term, let us call it "*rebound.*" Now, though the lower motor neurone gives out

normally 100 per cent. of tone, yet it can give out 200 per cent. The upper motor neurone acts in an inhibitory manner by restricting it, and 100 per cent only is given out, but if this restricting power were removed, the tone would bound up in proportion to the loss of the inhibitory power anywhere to between 150 and 200 per cent. Let us take as a simile a violin, and screw one string up to C. Now, let us allow some dust particles to alight on the cat-gut, and by suddenly vibrating the string the dust particles will jump off, perhaps an inch distant. Let us screw the string up to F, and we should find that in vibrating the string the dust particles would rebound three inches. This goes to show that when the tone is increased or otherwise stretched up by mechanical force, impulse becomes greater. Slacken the string to A, and we should find that the tone is lessened, and the mechanical propulsive power is equally in proportion lessened. So it is in man. When we have the tone of our lower motor neurone normal, which is 100 per cent., and let us compare this normal condition as being equivalent to the violin string when tuned up to F, mechanical striking of the patella with the leg at right angles to the thigh throws the foot forward; in other words, the knee jerk is obtained. But if due to some injury or removal of the controlling influence of the upper motor neurone over the lower motor neurone, the tone of the muscle is increased 150 to 200 per cent., then the knee jerk becomes markedly exaggerated. We saw in the violin that when the string was slackened and the tone thereby lessened the mechanical impulse was also lessened. Now, when we have any disease affecting the lower motor neurone, the function of which is to supply tonic and trophic influences to the muscle, the tone becomes lessened, and we find the muscles in a more or less relaxed state, just as we find when we slacken the string of our violin, and here also we find that when we tap the patella the excursion forward of the foot is lessened or lost in proportion to the diminution in tone. Following this, as the lower motor neurone is the trophic centre, we find atrophy taking place, and also the typical signs of reaction of degeneration to electricity.

Now, let us take up what occurs when we have involvement of the *lower sensory neurone.* But before doing so, let me here state that any neurone, to be perfectly normal, must obtain sufficient nourishment and stimulation; removal of either will produce lessened vitality, with the result that its normal functions are lessened. We know that the axone of the lower sensory neurone enters the cord by way of the posterior roots; here it sub-divides and sends some fibres or collaterals to the cells in the posterior horns; other branches run forwards to the anterior horns, and there arborize around the cell bodies of the lower motor neurones. If by experiment or by disease the connexion between

the lower sensory and lower motor neurone is interfered with, the normal stimuli necessary for the lower motor neurone to act being affected, the vitality of the cell is affected and a certain amount of loss of tone occurs. For the sake of a figure, let us call the normal tone 100 per cent. Now, any diminution in tone, however small, has a marked effect in diminishing the reflexes. This is noticed clinically, as the knee jerk is the first thing to disappear and the last thing to reappear, which shows that this idea is correct, and that the knee jerk and other deep reflexes are simply an expression of tone. Let us take as an instance a case of tabes dorsalis where the knee jerks have been lost for years, supposed to be due to the reflex arc being destroyed. The sensory neurones being completely degenerated, no stimuli can pass along them. Suppose this patient develops a hæmorrhage in the internal capsule. This will partially or completely destroy the upper motor neurones, with the result that the inhibitory influence over the lower motor neurone is removed. This being so, there is an output of tone from the lower motor neurone, and we find all the reflexes greatly exaggerated on this side, while the knee jerk might still remain absent on the other side. If the patient makes a good recovery in time, the knee jerks will be lost. This can be shown again in cases of complete transverse division of the cord in man where we have complete paralysis of motion and sensation, flaccidity and absence of the reflexes. Take a faradic battery, apply two needles to the ends of the wires, place one in the calf muscle, the other in the external popliteal nerve, continue this for half an hour or an hour, and if the division of the cord has been fairly recent, you can get the return of the knee jerk, lasting for a few minutes to half an hour. This is obtained by the increased tone produced by the battery. Similar conditions can be seen in tabetic patients, who later on in the disease develop general paralysis. In this condition the upper motor neurones are affected, and the picture first presented as a true tabetic condition passes into one where the reflexes are greatly exaggerated. I could relate many such cases showing that man and the lower animals are not comparable with regard to the ætiology of the deep reflexes.

As to the result of pressure upon the brain, spinal cord and peripheral nerves, let us begin first by observing what happens when, either by accident or by disease, pressure is exerted upon the peripheral nerves. To illustrate this, let us suppose that we have before us a dog with its sciatic nerve exposed. On this we place a test tube half an inch in circumference containing mercury one inch in depth. In an hour we shall find that the motor paresis begins to develop, while sensation to touch, pain, heat and cold is normal. If this be kept up for four or five hours the paresis becomes more marked, but there is no

alteration in sensation. Now, let us place two inches of mercury in the same tube, and apply it to the sciatic nerve of another dog, and we shall find that motion will be affected in from a few minutes to half an hour, while sensation will become involved in about two hours. At the end of six hours we shall find total paralysis of motion and sensation. If the tube is removed at that time, within twenty-four hours, sensation, subjective then objective, will reappear. It would be six or ten days before motion would return. It follows that if pressure was kept up for a fortnight or more recovery of motion and sensation would be extremely retarded. In all these experiments before motor paralysis or paresis supervenes the reflexes gradually diminish or become lost. All the above symptoms have been brought about simply by the pressure preventing the stimuli or trophic influences from coming down from the cell body to the muscles in the extremity, with the result that the trophic influence being interfered with, secondary changes have taken place in the muscles and paresis or paralysis developed, the reflexes have been lost, and if the condition has been prolonged, atrophy has made its appearance and electrical changes have become pronounced.

Now, let us take up the clinical signs manifested when we have pressure applied to the spinal cord, as, for instance, in cases of fracture, dislocation or pressure from a neoplasm or in pressure following Pott's disease. If pressure is exerted on the spinal column, paresis or paralysis of motion is the first to appear, and as in the peripheral nerves, if the pressure is long continued or severe in extent, the motor paresis is followed shortly by paralysis of sensation. The reflexes at first are greatly increased, and this is due to the pressure exerted upon the upper motor neurones, stimuli being prevented from coming down; the inhibitory influence is removed from the lower motor neurone, with the result that tone is increased in the muscles, and we therefore have increased knee jerks. But if the pressure completely cuts off all the influences of the upper motor and sensory neurones, we have loss of the reflexes, but no alteration to faradic irritability. What is the explanation of this loss of the reflexes? Here we still have the lower motor neurones below the seat of the pressure in a more or less apparent healthy state, and one would expect that tone would be still present, if not increased. The reason for the loss of the reflexes cannot be definitely proven, but Ferrier's theory is, I think, the correct one. He points out that in the lower forms of life the nerve centres are more or less isolated and independent units. We find that the higher we go in the scale the fusion of the nerve units takes place, and the functions become more complex as compared with the simpler forms of lower animal life. Ferrier points out that even in the monkey the animal

next to man, the central nervous system cannot be said to be similar. In the monkey on division of the cord we find a spastic condition and increased reflexes. Extirpation of certain parts of the cerebral cortex in that animal does not give the same symptoms as are obtained in man, and Ferrier shows how in the monkey the nervous system is not all one nervous unit, while in man it is. For the functions of the nervous system to be carried out in the human subject it is necessary to have complete integrity. When a separation of a part of the central nervous system occurs, death takes place, though it may occur very slowly, but function is at once interfered with. Tone can only exist where integrity is present. Of interest in connection with the central nervous system in man, as above stated, it is necessary that integrity be present for the normal reflex function to be carried on. Dr. Beevor reports the case of a child six weeks old, where the spinal cord below the sixth cervical segment was destroyed and possessed no recognizable living nerve element, between the two parts. Yet, the self action of the centres of the bladder and rectum seemed to be retained. Spontaneous evacuation of the bladder took place resembling periodically and otherwise reflex evacuation. This case shows, I think, that in very young children the nervous system has more resemblance to that of the lower animals. The stimuli not reaching the cell bodies of the lower motor neurones in the anterior horns; "isolation alteration," as it is called by Collier, takes place, with the result that we get secondary changes in the cell bodies, which later on give reaction of degeneration in the muscles.

In the same way isolation alteration takes place in the anterior horn cells when we have the lower sensory neurone involved, as, for instance, in tabes, which gives us an absence of reflexes, due to lessened tone in the muscles; but here we do not find reaction of degeneration in the muscles. Why? Because it is impossible to have all the posterior roots involved, which is necessary before we can get it, while in cord pressure, which is great enough to produce abolition of all the stimuli coming down in the motor and going up the sensory, being equivalent to transverse division of the cord, the stimuli to the anterior horn cells below the site of the pressure is done away with, and we have those cells undergoing isolation alteration changes. If pressure is removed, sensation returns first, then motion, followed by normal response to faradic irritability, and last of all the reflexes.

I shall now deal with Pressure on the Brain from the results of accident or depressed fracture, or Pressure from a Hæmorrhage or a Cerebral neoplasm. The first clinical symptom manifested, especially when the pressure affects the motor cortex, is irritation, as expressed by Jacksonian epilepsy, which is, followed by paresis or paralysis, with increased

reflexes and hypertonicity of the muscles, just the same as is seen when pressure is applied to the cord. This is due to the inhibitory influence of the upper motor neurone being prevented from controlling the output of the lower motor neurone, with the result that tone is increased, producing the symptoms above described. On removal of the pressure, the paralysis disappears, and shortly afterwards the reflexes become normal. We do not find in this latter case any alteration to faradic to the fact that for the patient to survive a trauma the lesion will in all probability be situated on one side of the cerebral cortex, and more or less limited in extent. The upper motor neurones of the uninjured side not only supply stimuli to the cell bodies in the anterior horns of the opposite side, but also to the horns of the same side, and in this way sufficient stimuli reach the cell bodies to prevent isolation alteration in the cells.

Having now obtained an idea of the ætiology of the symptoms which appear when the peripheral nerves are pressed upon and also of the cord and brain, we can see how absolutely necessary it is to remove pressure at the earliest possible opportunity, so that secondary alteration will be prevented. Having removed the pressure, we must now treat the results produced. What must we do? Knowing the cause and conditions which follow, we have to set about treatment as early as possible. When the peripheral nerves are involved, it is necessary to keep up the tone of the muscles till such time as the stimuli can come down from the cell bodies in the lower motor neurones. This we do by constantly stimulating the muscles either by galvanic or faradic massage. Why do we use the faradic and galvanic battery? If the faradic battery obtains a response, strong current being used, the muscle is stimulated; that is, it causes contraction and increases the tone. If the muscles do not respond to strong faradic electricity, the galvanic form must be used, and this will cause contraction of the muscle so that the muscle is kept in a fairly healthy condition, and when the stimuli do begin to come down from above it will be in a fit state to receive them. Not only do we use the faradic and galvanic battery to keep the muscle as far as possible in a healthy condition, but through the pain occasioned, and also by the action of electricity in stimulating the nerve, impulse may travel up the lower sensory neurone, and by their momentum reach the posterior horns, and from there reach the anterior horn cells producing stimuli which they would not otherwise get, and in this way aid the early return of the normal action of the neurone.

I shall now cite a case:—J. C. C—, aged fifty-six, labourer, was brought into the hospital complaining of loss of power and sensation in the lower limbs. He had no serious illness, nor was he unable

to attend to his duties through ill-health. When thirty years old he had syphilis, and was treated for it. Since his youth he has been of intemperate habits, having a spree every two or three months, lasting for three or four days at a time.

On Saturday, November 30th, 1903, he had a spree, and left the public-house at eleven o'clock at night, under the influence of alcohol, with the intention of going home. On Sunday morning he was awakened by some one roughly shaking him and telling him to get up. He attempted to do so, but found he was unable to stand. He then noticed that he was in a stable; he had spent the night there, but was unaware of what had occurred during the interval. He was found lying at the foot of a ladder reaching up to the hay-loft, but whether he had fallen upon attempting to go up or down he did not know. When brought into the Montreal General Hospital, under Dr. Molson's care on Sunday about eleven o'clock, he was suffering from complete motor and sensory paralysis of the lower extremities, with urinary retention. I saw him in consultation with Dr. Molson at twelve o'clock, and it was hard to arrive at the diagnosis. He had a certain amount of ecchymosis and bruising on his back in the lumbar region, but no spinal irregularity. He was in a very nervous state, seemed to be on the "borderland" of delirium tremens, and could give us no help towards diagnosing his case. There were two conditions which might have produced the symptoms, but we were unable to decide between them. One was that he might have fallen from a height and produced fracture-dislocation of the spinal column, causing pressure on the cord. The symptoms pointing to this were pain and the bruising and ecchymosis in the lumbar region. The other condition might have been a thrombosis of some of the spinal vessels, with a resulting softening of the cord. The history of syphilis and alcohol and very marked arterio-sclerosis, which was found to be present generally throughout the body, pointed to the probability that it might be due to this latter condition. A lumbar puncture was made in the hope of arriving at a definite diagnosis. The serum was collected in three different test tubes, and each was found to contain blood-stained fluid. This at once confirmed the idea that trauma was the cause of the symptoms. There was a well-marked motor paralysis and spasticity of both lower extremities, with complete anæsthesia. The reflexes were all exaggerated. There was knee-jerk, rectus clonus, ankle clonus, Oppenheim's, and Babinski's sign. Well-marked girdle sensation was present in the upper part of the abdomen in the region of the eighth dorsal segment. Here also was found an area of hyperæsthesia to heat and cold, about an inch in width; above this point sensation was normal, below the area completely anæsthetic to all forms. Faradic and

galvanic irritability were normal in the muscles of the extremities. As the patient was in such a poor condition, being on the borderland of delirium tremens and his chest full of rales, it was thought inadvisable to have him placed on the operating table and an anæsthetic administered.

On Monday the paralysis of motion and sensation were unaltered, and urinary and rectal retention were still present. The patient complained of a considerable amount of pain in his back and of a girdle sensation. He slept very little during the night, was unable to take nourishment, and there were present symptoms pointing to a pneumonic condition. On Wednesday he was much the same, with this exception, that the reflexes were not so brisk as previously. Galvanic and faradic irritability were normal. On Thursday the reflexes were diminished in the right leg and absent in the left. On Friday all the reflexes were gone and the spastic condition less marked. Monday, on examining him, we found that, in addition to the loss of the reflexes, the muscles showed slight alteration to the faradic and galvanic current, with flaccid paralysis. On Wednesday faradic response was completely absent throughout both lower extremities. The surgeon was strongly advised to operate, as the symptoms now seemed to point to a progressive condition, and were more or less typical of complete transverse division of the cord. The patient was taken to the operating theatre, and given brandy and a hypodermic injection of cocain, administered locally. Dr. Armstrong then made an incision over the spines of the seventh, eighth and ninth dorsal vertebrae, cutting down and exposing the bones. The laminæ of the seventh and eighth dorsal vertebrae were found to be fractured, but not causing any pressure. On their removal, and opening the dura mater, stimulation of the cord by mild faradic current did not cause any discomfort to the patient. It was decided that there was pressure further up. On exposing the sixth dorsal, it was found that the laminæ were also broken, and pressed forward lying upon the cord. They were removed. The dura mater was opened. No blood clot was found, nor was the cord severed, but a certain amount of flattening had taken place where the laminæ of the sixth dorsal vertebra had lain upon it. On stimulation in this region the patient was at once conscious of pain. The wound was closed up, the patient put in a plaster jacket and removed to the ward. Throughout the operation he bore up better than was expected.

This case illustrated to me the value of operating without putting the patient under the influence of a general anæsthetic in all these cases of fracture-dislocation, for the reason that we were able to tell at once whether we had reached the seat of pressure by the patient being able to tell us whether or not he felt the stimulation of the battery.

On the following day electrical treatment was given to the extremities, and this was more or less regularly applied for three weeks. Ten days after the operation the patient began to complain of subjective sensations in his extremities. On the 11th day he was aware of the catheter being passed, and a few days later he was able to tell the orderly that he felt fæces passing through the rectum. At this time the knee jerks reappeared, and a week later a well-marked ankle and rectus clonus were present. About the same time faradic irritability to strong current returned in his muscles, the galvanic responses were normal. December 10th, the patient complained of involuntary spasms in the lower extremities. From that time very little progress was made in his condition.

At the present time the patient still suffers from complete loss of motor power, sensation having but slightly returned. Rectal and vesical retention is still present. He is able to sit up in bed, and his general health is markedly improved. Had electrical treatment and massage been carried out, I have no doubt that to-day he would have had a return of motor power, but for many reasons this could not be done.

The history of the course of events in the case just related is interesting in that it resembles very closely the experiment related in the first part of this lecture, namely, pressure being applied to the sciatic nerve of a dog. Here we have first of all a motor and sensory paralysis due to the pressure inhibiting to a large extent the motor and sensory impulses from passing either up or down. The reflexes were increased, due to the inhibitory influence of the upper motor neurone being interfered with. Later on, as the pressure was still being applied, all impulses coming down or going to the brain were completely cut off, just as we would have if the cord was cut through. This was shown, clinically, by the flaccid motor and sensory paralysis. Still later on, isolation alteration had taken place in the cells of the lower motor neurones in the anterior horns below, the seat of the pressure, with the result that we got marked loss of tone and typical reaction of degeneration to the faradic and galvanic battery. The removal of the pressure was followed within a week by the return of the reflexes, then a spastic condition, and later on by the normal response of the muscles to electrical current. Though no discontinuity or severance of the cord was found, no doubt a considerable molecular change and separation had taken place in the axones and myelin sheaths of the neurones of the spinal cord. In the experiment with the sciatic nerve we found sensation was the first to return, later, motion. Now, had the muscles in the lower extremities been kept in good condition by electrical treatment and massage, till such time as regeneration had taken place in

those upper motor neurones that had been injured, the patient might have had considerable locomotive power to-day. No doubt the history of specific disease and alcohol and his age all help to hinder a good recovery.

In this case it is of interest to know whether the results were due to the immediate effects at the time of the accident or to the steady and prolonged pressure on the cord producing a progressive development of a condition which at the 10th day pointed clinically to the symptoms of transverse division of the cord. It is no doubt possible that the fracture and displacement of the laminæ of the dorsal vertebrae might have impinged on the cord with such force as to produce marked molecular separation of the constituents of the motor and sensory neurones, and yet not produce a macroscopical alteration in the cord. Immediate operation with the removal of fragments might even then have failed, if the above had taken place. The history of this case rather points to the reverse, it being due to a more prolonged and continuous pressure than from the immediate results of the accident, as shown by the progressive steps in the progress of the case. This goes to show how advisable it is to operate early in all these cases in the hope that little molecular damage has been done, and to prevent by any continuous or prolonged pressure the development of more serious symptoms.

Cerebral Pressure and Laceration:—J. S., aged twenty-eight years, a mechanic in the Canadian Pacific Railway workshops at Hochelaga. Patient while at work was struck on the forehead by a piece of machinery and knocked down, receiving an incised wound on the left side of the forehead. He was unconscious for about half a minute, and was at once brought to the Montreal General Hospital by an ambulance, arriving there at 10.30 a.m. in a semi-comatose condition. When seen shortly after entrance he was suffering from the results of the concussion, and still in a more or less semi-comatose condition, but by talking loudly to him he gave his name and address, and a few facts concerning the accident. The wound was thoroughly washed out by a house surgeon, and no depressed bone or fracture was visible. A few stitches were inserted and the scalp dressed. Dr. Armstrong saw him about 12 o'clock, but no alteration was found in his condition, except that the stuporose state was a little more marked. At 1.30 p.m. Dr. Armstrong found the patient in a very marked state of stupor, and noticed that the limbs were becoming rigid, especially those on the right side. Drs. Blackader, Lafleur and myself were requested by Dr. Armstrong to see the case, as he was inclined to think that the condition of the patient pointed to the likelihood of a fresh hæmorrhage taking place. On examination at this time, the patient, though in a

semi-comatose condition, could be aroused when spoken to loudly, and gave us his name and address. The extremities were not paralyzed, but there was present a certain amount of rigidity, the right side being more affected than the left. No ankle or rectus clonus was present. Plantar flexion was present. Knee joints were normal. Pupils were equal, and reacted to light and accommodation. Pulse at entrance 60, an hour afterwards 45, and at the time of examination 65, full and regular. Blood pressure 175, bladder empty. Patient lay on his back. On admittance he had a hæmorrhage from the nose and vomited blood. No discharge from the ears. Dr. Armstrong diagnosed the case as a probable fracture of the anterior fossa of the cranium. On applying a cloth saturated with ammonia to the patient's nose, sense of smell was seen to be present. On pricking any part of his body with a pin, he resisted and moved about saying, "Leave me alone." Dr. Armstrong said that from his experience in cases where coma became deeper after the patient's entrance to the hospital, a grave prognosis was probable. He wished to have our opinion whether it was wise to carry out a trephine operation and ligature of the middle meningeal artery. With Drs. Blackader and Lafleur, I was of the opinion that, as there were no definite clinical signs pointing to the need of this, it would be advisable to delay for a short time. I suggested that there was a point which might aid us in arriving at a diagnosis, namely, that a lumbar puncture be made to ascertain if blood was present in the cerebral spinal fluid. This was done, and the serum was drawn off into three different test tubes. Blood of a bright red colour was present in equal proportions in each of the tubes. This at once proved that some cortical laceration was present. If the middle meningeal, which is sub-dural, was alone involved, the blood would not likely be present in the cerebral spinal fluid.

Half an hour afterwards, while Dr. Armstrong was showing me a case on the opposite side of the ward, we were hurridly called across by the nurse to see our patient in convulsions. It was a condition of bilateral epilepsy. Tonic and clonic spasms, well marked with retraction of the head and eyes to the left side and pupils markedly dilated. Ten minutes after this fit, a well marked external squint was seen in the right eye, this probably being due to the irritation of the cortcial sixth nerve.

The above symptoms pointed to the need of immediate operative procedure. The patient was taken upstairs and put under chloroform. He had four attacks between the first fit and the time of reaching the operating table. After he had been prepared for operation, a large wound was found penetrating down to the pericranium, starting about one and a half inch above the inner canthus of the eye, and three-

quarters of an inch internal to it, extending upwards, backwards and outwards for a distance of two and a half inches. At the bottom of this a fracture was detected in the bone. A small trephine operation was made over the region of the head and eye centres, that is, the posterior part of the mid-frontal convolution. The dura mater was opened, but no pronounced bleeding was seen, except a general slight oozing. The bone was not replaced, but the scalp was sutured, the head dressed and the patient returned to bed.

The operation was carried out more for the relief of pressure than in the expectation of finding a large bleeding point, for the localized symptoms, retraction of the head, neck and eyes, the rigidity of the right side and the external squint on the left were not altogether sufficient signs in themselves to give a definite localization where it would be advisable to operate. A small trephine operation was carried out, as recommended by Coker and Cushing, in the hope of relieving intercranial pressure, and thereby arresting the hæmorrhage.

The patient made a good recovery from the anæsthetic and operation, slept well that night, and had no return of the convulsions. Next day he was perfectly conscious, the rigidity of the limbs disappeared completely, and in ten days he left the hospital.

The interesting points in this case were that the patient, after being three hours in the hospital, did not show any particular symptoms pointing to a serious cerebral injury more than the semi-comatose condition, the hæmorrhage from the nose and mouth, and the slight rigidity. As the pulse and respirations were good and paralysis absent, one hesitated in recommending an operation. Dr. Armstrong's probable diagnosis was that of fracture of the anterior fossa of the cranium, associated with possible hæmorrhage in the middle meningeal artery, giving the deepening coma as his reason for the latter hypothesis. The lumbar puncture revealing the presence of blood in the cerebral spinal fluid pointed to cerebral laceration being present. The second point of interest was the obtaining of blood in the lumbar region in such a short interval after the accident, which shows the rapidity with which the blood can pass from the cerebral cortex to the lumbar region. Third, the remarkable relief of symptoms upon the removal of a small circular piece of bone and opening up the dura. Fourth, marked improvement in the conditions within a few hours and the drop of the blood pressure—which was never very high—from 175 to 120. Fifth, this case, like the other I have discussed, points to the advisability of operating early for the relief of pressure; for we see, as mentioned in the early part of my paper, how, if pressure is allowed to continue long, degenerative changes take place in the neurones, with the result that recovery is protracted, and last but not least, the tendency is,

where laceration has taken place and pressure is considerable, for inflammatory foci to be induced and followed by more or less serious consequences.

Case of Pressure on the Cauda Equina:—J. M., aged thirty-seven years, sailor. On November 22nd, 1904, patient fell a distance of thirty feet into the hold of a ship, producing fracture dislocation of both ankles. At the time of the accident he did not lose consciousness. He was seen by a doctor, and given an injection of morphia for the removal of pain, and immediately brought to the Montreal General Hospital in the ambulance, and placed under Dr. Hutchison's care. On admission, it was found he had fracture-dislocation of both ankles, with motor paralysis of both legs. He complained of a considerable amount of pain around his waist and down both lower extremities. He had to get morphia for the relief of this pain. Nine hours after entering the hospital the patient was catheterized and seven ounces of fluid was drawn off. Retention, if present, was probably due to the morphia, as he was deeply under its influence. For four or five days he complained of considerable pain starting at his waist and shooting down his legs. On the 27th of November the shooting pains only reached his knees, and for the last two days he has had none. Constipation was a feature at the onset but since the morphia has been stopped, for the last three days, his bowels have opened regularly. He has had no urinary trouble unless as mentioned on the day of admittance. On December 1st Dr. Hutchison requested me to see the patient. I found him lying on his back with his legs widely adducted, and flexed at the knees with rotation outward of the feet. He stated that when lying in this position he imagined his legs were adducted, his knees flexed and the soles of his feet resting on the bed. He is perfectly normal mentally. Over the region of the lumbar spine is a soft fluctuating hæmatoma about three inches long by two and a half broad, which was aspirated three days ago. There is considerable bruising and ecchymosis over the lower dorsal and lumbar regions, extending out on both flanks. On pressure one can detect a depressed fracture in the region of the third and fourth lumbar spines. There is present a marked flaccid paralysis of both lower extremities. Knee jerks, plantar excitability, and cremasteric reflexes are gone. The reflexes in the lower abdomen are indefinite, but in the upper quadrant of the abdominal wall they are well marked with a tendency to be increased. There is no band sensation. Sensation to touch, sharp and blunt point, heat and cold seem to be fairly normal as compared with sensation in the upper extremities; but on the plantar and dorsal aspects of the feet sensations are considerably diminished, this being probably due to the result of the fracture dislocation of the ankles causing pressure on the

nerves. Faradic battery of medium strength, which gives contraction in a healthy individual, fails to elicit any response in the muscles of the lower extremities. With full current, no response is obtained in the left leg, while on the right there is a feeble contraction of the calf muscles with a fairly well marked but slow contraction of the quadriceps. Electrical sense: full current not detected below the knee of the left leg; but as we proceed up the thigh sensation becomes apparent, and about two and a half inches below Poupart's ligament sensation is extremely hyperæsthetic. On the right leg there is no sensation below the knee, but just above sensation begins to appear, increasing in extent to become very apparent at the same level as the opposite side, with this difference, that electrical sense is more marked on the right thigh than on the left. One-half current can be tolerated all over the scrotum; at the base very little sensation, if any, becoming painful near the root of the penis. There is no muscular contraction of the scrotum. There is a bed sore on each heel and a small one on the great toe of the right foot. This is due probably to the pressure of the pillow splints, which were on for several days after entrance, but are not now being used. There is some œdema from the knees down, and slight trophic disturbances in the skin of the feet.

1. An interesting fact is that the probable explanation for the presence of active sensation in the front of the thighs is that the ilio-inguinal, genito-crural and iliohypogastzic leave the spinal canal via the foraminæ in the region of the first and second lumbar vertebrae, and the seat of the pressure being in the region of the third and fourth, they have escaped.

2. The absence of any rectal or sphincter trouble.

3. The incompleteness of sensory paralysis going to show that pressure caused motor paralysis, reaction of degeneration, absence of the reflexes, and a flaccid state, yet was not sufficient to produce any great loss of sensation in the limbs from the ankles upwards.

4. The electrical sense being better marked on the right than the left, I have frequently found this condition present where the lower motor neurone is involved, yet not to such an extent as to give typical reaction of degeneration to the faradic and galvanic current. I have also seen cases with the loss of electrical sense, without any electrical changes in the muscles or alteration to sensations of touch, pain, heat and cold, showing in a few days following the typical reaction of degeneration.

5. In this case had we not the fractured dislocation of the third and fourth lumbar vertebrae with the non-involvement of the ilio-inguinal, genito-crural and iliohypogastric nerve, it would be hard to make a differential diagnosis between this and multiple neuritis of the peripheral nerves of the lower extremities.

Pressure Paralysis of the Brachial Plexus in adults, of which six cases are now under treatment at the Montreal General Hospital. [Case I.] A.S., piano player and tuner. He was brought into the Montreal General Hospital under Dr. Hutchison's care, suffering from a simple fracture of the tibia and fibula. The patient is about 5 feet 10 inches in height and weighs 200 lbs., fair complexion and of average intelligence. He has been a constant imbiber of alcoholic liquors, but never remembers having been drunk. The fractured limb was put up in a cast, and about a week later the patient was sent home. He was able to move about a little with the aid of a crutch; eleven days after his return home he began to complain of subjective discomfort down his right arm. On the following morning he woke up to find his arm completely paralyzed. He returned to the Hospital and Dr. Hutchison requested me to see him. I made an examination of the patient five days after the onset of the symptoms and found a complete paralysis of the musulo-spiral nerve of the right arm. There was "wrist drop" with ulnar deflection. He was totally unable to extend the wrist or the fingers, and had great difficulty in raising his arm to the level of his shoulder. Considerable paresis was made out in the triceps, as shown by his inability to extend the arm against the resistance of my forefinger. Power of flexion at the elbow was considerably diminished. The supinators, long and short, were paralyzed, which accounted for the paretic condition of the flexors of the elbow joint and the inability to supinate the arm. The flexors of the wrist and fingers were also affected. The right hand registered 15 on the dynometer, the left 80. The scapular humeral and acromial reflexes were present. Elbow jerk absent. A flaccid condition of the limb was present. Sensation to sharp and blunt point, heat and cold was diminished over the sensory distribution of the musculo-spiral nerve, but in comparison with the extent of the paralysis it was very slight, fairly complete and sharply limited. Subjectively the patient complained of prickling and slight numbness in the tips of the thumb and index finger. The reaction of degeneration in the muscles was positive but not well marked. The electrical sense was considerably diminished to a strong electrical stimulation as compared with stimulation with a pin or pointed instrument.

He has been treated with electricity and electrical vibrations and has been given hypodermic injections of nitrate of strychnin, the arm being kept in a splint, with the result that a rapid progress towards recovery is taking place. The interesting point in this case is the crutch pressure in a patient of intemperate habits leading to the above condition. Prognosis is good.

Pressure Paralysis of the Brachial Plexus: [Case II.] A. D., aged 60

years, labourer, French Canadian, recommended by Dr. Reford. The patient came to my neurological out-door clinic at the Montreal General Hospital, October 20th, 1904, complaining of pain and loss of power in the left arm, with epileptic fits.

Family History: Grandfather had cerebral hæmorrhage; has one sister living, mother took alcohol to excess.

Personal History: Married three times. Has always been a hard drinker, taking from 10 to 12 glasses a day. No serious illness till five years ago, when he had his first epileptic attack. Was going to a grocery store with his wife when he fell down and lost consciousness; two years afterwards the second fit appeared; does not know when he had the third, but during the last twelve months he has had three; during a fit he always lost consciousness, bit his tongue and voided urine. He is mentally deranged for a day afterwards, but no motor paralysis follows the fit. *Present Illness*: He was perfectly well till Wednesday, October 19, 1904, when, upon getting up in the morning, he had an epileptic seizure, lost consciousness, bit his tongue and voided urine. He states he was unconscious all that day. On Thursday he drank a bottle of brandy and does not remember much of what occurred that day. On Friday he was seized with a pain in the back, and in the evening the pain began to radiate down the arm to the hand. He also noticed that he was losing feeling in his arm. When he awoke the next morning he had lost the sense of position of his arm and had to look around to see where he was. He called in a doctor who prescribed morphia, and three days later he came to the clinic.

Present Condition: On examination the arm was found to lie flaccid and absolutely motionless by his side, with the exception of a certain amount of limited movement in the fingers, and this could be seen only when the hand was lying upon his knee. Sensation deficient to touch, pain, heat and cold in the palm of the hand, while above that extending from the wrist to the shoulder it is hyperæsthetic. There is marked arterio-sclerosis present, the pulse feeling like hard shot. Pupils equal. Knee jerks active. No rectus or ankle clonus. Achilles' tendon active. Mentally the patient is very excitable and jumps on the slightest provocation. Faradic irritability was slightly reduced, galvanic cathodal closing showed marked excitability (reaction of degeneration).

November 4th. Faradic irritability considerably diminished requiring a very strong current to produce contraction in any of the muscles. Very marked atrophy is now apparent in all the muscles, but particularly in the deltoid and muscles of the upper arm. Electrical sense is much diminished throughout and absent in the upper arm. Touch, pin prick, heat and cold are felt the same on both arms. Sensation

to wool is only slightly diminished in the palm and back of the fingers, otherwise normal throughout the extremity. Sense of position in the joints of the extremity normal.

November 18th. Pain still present, accompanied by burning sensation. Sensation to touch, pain, heat and cold markedly diminished throughout the whole left arm.

December 2nd. Well marked flaccidity and atrophy of the left arm, with a certain amount of vaso-motor disturbances, particularly in the fingers of the hand. Sub-luxation of the shoulder joint. The deltoid is so much atrophied that it can hardly be made out. Slight movement of the fingers when the wrist is supported, none at the shoulder or elbow joint. Complete anæsthesia to electrical sense, full current, while sensation to touch, pain, heat and cold is only partially affected. Full current of the faradic battery does not reveal to the eye any contraction of the muscles in the left upper extremity, except over the inner front aspect of the forearm below the elbow joint where a slow and sluggish contraction takes place, producing flexion of the wrist.

Treatment: Patient's arm is supported in a sling. He is getting galvanism and vibratory massage to the extremity, and along with this, local hypodermic injections of nitrate of strychnin. The prognosis is not favourable, seeing that there is such a complete paralysis of the brachial plexus associated with the rapid appearance of marked atrophy, that the patient is advanced in years, and vascular degeneration is such a prominent feature.

The interesting points in this case are: First, The appearance of an epilepsy in a man of his age, idiopathic epilepsy never appearing at such a time. The onset of epilepsy at this age is often due to cerebral neoplasm or associated with arterial alteration, the latter being the cause in the case. Second, The early disappearance of electrical sense to strong current, when other sensations to pain, touch, heat and cold were more or less normal, and associated with this the marked motor paralysis. Third, As the condition advanced, anæsthesia to all forms of sensation made its appearance in the order one would expect, touch being the last to become affected, as illustrated in the experiment in the early part of my paper.

Paralysis of the Musculo-Spinal from Trauma: [Case III.] J. W., aged 38 years, carter, French Canadian. On November 18th, 1904, he was sent to my Neurological Clinic at the Montreal General Hospital, by Dr. Springle, complaining of inability to raise his arm.

Personal History. He has had fits since he was 12 years of age, the attacks coming on usually about once a month. He has no warning. The fits are more frequent if he indulges in alcohol.

Present Illness occurred on September 23rd, when he fell from his cart during an attack of epilepsy, and became unconscious. A friend who was driving with him at the time reports that the patient was struck by the horse's hoof and the wheel of the vehicle passed over his left shoulder. The accident occurred at Verdun, about 11.00 a.m. He was at once taken by the ambulance to the hospital. He regained consciousness about an hour after admittance, but was not able to move his arm. He remained in the hospital for twenty-four hours.

On examination at the clinic it was found that there was a paralysis of the musculo-spinal nerve affecting the extensors of the elbow, wrist and fingers. Little objective sensory disturbance was detected. Subjectively he complained of a good deal of numbness and "pins and needles" pains. Elbow reflex absent. Considerable weakness in the flexors of the elbow and wrist. Dynamometer registered 15 L., 50 R. hand.

December 2nd. Examination showed a more pronounced paralysis. Flexion of the elbow against my finger was impossible. Extension of the elbow against the same resistance also impossible.. Patient can now raise his arm vertically above his head. The biceps and deltoid are performing their functions well. Supination of the hand is impossible. Subjective complaint is numbness in the thumb, none elsewhere. Faradic irritability is considerably reduced, in the triceps and extensor muscles of the forearm as compared to the right side. Electrical sense is considerably diminished and there is also partial anæthesia to touch, pain, heat and cold. Knee jerks are very active.

Treatment: Same as foregoing patient. Prognosis is hopeful. The patient is younger and the atrophy is not marked. The alcoholic habit will somewhat retard his recovery.

[Case IV.] F. C., aged 29, mill spinner, French Canadian, November 18th, 1904, complains of loss of power in the left wrist. About five weeks ago the patient fell from the third story of the factory to the ground. In falling he caught the railing of the veranda on the second story with his left arm, which was severely lacerated and bruised. He was laid up for a week, at the end of which time he returned to work. He had to discontinue in a few days as he found the left arm was becoming weak. This case is very markedly similar to the other, with this difference, that it is not so severe in type. The prognosis is in every way hopeful.

[Case V.] C. G., female, aged 65 years, Scotch, widow, November 25th, 1904, complains of loss of power in the right arm. This case is also typical of a musculo-spinal paralysis, but here there is no history of trauma or alcoholic habits. The onset has been slow and there has been

both muscular and sensory paralysis with reaction of degeneration in the muscles. After a careful examination we failed to detect any ætiological factor for its production, except the history of frequent attacks of rheumatism.

[Case VI.] A. B., female, age 34, seamstress, patient of Dr. Lafleur's, October 7th, 1904. I saw the patient in consultation in the ward with Dr. Lafleur and she later on attended my clinic. The patient has been of very intemperate habits for the last eight years. After a severe drinking bout, she woke up to find that her right arm was paralyzed, she having slept with it under her head all night. She was brought into the hospital, and when I saw her ten days after admittance, she showed typical symptoms of motor paralysis of the musculo-spiral nerve. No objective sensory disturbances could be detected. Faradic and galvanic irritability were normal. The reflexes were present and exaggerated. In some points this case might have been mistaken for a functional condition. Ten days later she appeared at my out-door clinic, considerably under the influence of alcohol. On this occasion the reflexes were lost. Complete motor paralysis was present. There was considerable anæsthesia to all sensations. Electrical battery, full current, caused no discomfort. Typical reaction of degeneration in the muscles supplied by the musculo-spiral nerve was detected.

An interesting point in this case was that when first we saw her, the increased reflexes, absence of any objective sensory disturbances or electrical changes pointed to the early stage of the disease and mildness of the attack, though the loss of voluntary power was very considerable. On the second visit the advance of the disease was well shown by the motor and sensory paralysis, the marked loss of electrical sense and the reaction of degeneration.

Brachial Palsy. [Case VII.] A. S., aged 38 years, locomotive engineer, February, 1904. The patient came to my clinic at the Mary Fletcher Hospital, Burlington, complaining of complete motor paralysis of the right arm. The history of the case is that seven months previous he had been thrown from his engine a distance of about eight feet, alighting on his shoulder. Otherwise he did not receive any serious injury. When he got up he at once perceived that his arm was paralyzed, but was able to walk to the nearest station, a distance of a couple of miles. On examination, complete flaccid motor paralysis of the right arm was detected. The reflexes were lost. Sensations to touch, sharp and blunt point, heat and cold were normal, being equal to the arm of the opposite side. Typical reaction of degeneration was present in the different muscles of the arm.

Here I first learnt that electrical sense may be completely absent and

other sensations perfectly normal. I had been applying the faradic battery, full strength to the paralyzed arm, without causing any muscular response or discomfort to the patient. In a moment of thoughtlessness I placed the electrodes on the other arm with the result that it caused the most excruciating pain, the patient not only objecting verbally, but using physical force, telling me that the pain was intolerable and that I had "better not try it again."

Birth Palsies due to Pressure on the Brachial Plexus. [Case I.] C. P., aged 5 weeks, was brought to my out-door clinic at the Montreal General Hospital, April 22nd, 1904, with loss of power and sensation in the right arm from the shoulder down. This had been present since birth. Chloroform was used, but the use of instruments was denied by both mother and grandmother. *Present Condition.* There is no apparent movement of the upper extremity on the right side. An abnormal enlargement, about the size of a small walnut, approaching a bony construction was made out on the left side of the neck, running the course of the sterno mastoid muscle. There is a marked enophthalmos, with contraction of the pupil on the right side. The child was put under an anæsthetic and examined by the X-rays to ascertain if there was any trouble in the shoulder joint. Nothing was detected. On application of strong electrical current, no contraction could be made out in any of the muscles of the right or left arm. Treated with galvanism and electric massage, with local hypodermic injections of nitrate of strychnin twice a week. On April 23rd there was no difference. On May 3rd, upon stimulating with the faradic battery, the deltoid and pectorals major contracted sluggishly, as did also to a slight extent the biceps. The child was able to raise the arm and forearm off the mother's lap, but not the hand. This was the first time this movement had been observed. Electrical sense markedly blunted, battery not seeming to cause any discomfort in the injured arm, but when applied to the normal side the child decidedly objected.

June 7th. Slight improvement has taken place, right pupil markedly smaller than the left. July 15th. Mother states that the baby grasps her fingers when placed in its hand; before, it was absolutely paralyzed. July 22nd. There is distinct movement in the arm, forearm and fingers. Elbow and forearm reflexes absent. August 16th. Movement in the forearm and hand much stronger. September 23rd. Faradic irritability still absent in the muscles of the forearm and hand; 7 mm. galvanic current produced contraction, which did not occur before. The bony thickening in the sterno mastoid muscle has now disappeared. October 4th. No change in the eye, but considerable improvement of motion in the arm.

An interesting point in the above case was that when the child was first examined, under an anæsthetic—when it was five weeks old—we were unable with a strong current to produce a contraction in any of the muscles of either the right or left arm. This might have been due to the considerable amount of fat present in the extremities. It also illustrates the fact that in young children the myelin sheaths of the nerves are not as a rule fully developed, and when this is so, response to faradic current is not obtained. Another point of interest was the enophthalmos in the right eye pointing to a probable involvement of the anterior roots of the first dorsal and eighth cervical. The prognosis of the case is favourable. The average duration of a case of this severity would be from a year to eighteen months, and probably considerably over that time if proper treatment is not applied.

[Case II.] O.F., aged two and a half years. On September 17, the patient was sent to me by Dr. Shepherd, with paralysis of the left arm, which had been present since birth. At the time of delivery, the doctor informed the mother that there was a cross-presentation and that the birth of the child would be extremely difficult. At birth the left arm was limp and motionless, and it was thought that there was a dislocation.

Dr. Shepherd saw the child a short time before it came to me, and pronounced the condition as pressure paralysis of the brachial plexus. The mother states that at the time of birth and for months afterwards the arm hung limp by the side and that there was little if any sensation to pain in the limb. She also noticed that the palpebral fissure of the left eye was smaller than the right. *Present Condition.* The child was put under an anæsthetic and an X-ray examination was made. Nothing abnormal was detected. Electrical examination: strong faradic current failed to produce any contraction in the muscles of the left arm, while the same current produced an active response in the right arm. There was marked shortening of the humerus, an inch and a half as compared with the healthy side. Well marked "wrist drop," with ulnar deflection and paralysis of the extensors and flexors of the elbow and fingers. October: Patient has been under treatment since the day above mentioned, and considerable improvement has taken place. There is marked recovery of power in the arm, the patient being able to abduct it from the side and raise the forearm to the level of the head. Paralysis of the wrist and fingers is still present, Sensation in the arm to touch, pain, heat and cold is apparently normal, that is as far as one can judge of it in a child of this age. Elbow jerk absent. Electrical sense is markedly diminished. Very little contraction in the muscles supplied by the musculo-spiral nerve takes

place to strong faradic current. November 15th. The child now cries when given the hypodermic injection. Before this there did not seem to be any painful sensation to the child when it was administered. Stiffness in the wrist and elbow are markedly diminished. Altogether the progress of the case is in every way satisfactory. The interesting points in this case are the history of difficulty at birth, the enophthalmos, the absence of the faradic irritability and electrical sense while other sensations were more or less present. Prognosis is good.

[Case III.] G. K., aged 18 months, Scotch, November 10th, 1904. The mother consulted me on account of her child, who was suffering from a paralysis of the right arm, dating from birth. Family of two, the eldest is two years old and has been able to walk only the last five months, supposed to be due to dislocation of the hip, which occurred at birth. Both the children were born with the assistance of chloroform and forceps. At the time of birth or soon after the mother noticed that the right side of the child's forehead was bruised, and she also states that the right arm was dislocated at the shoulder. About this time she also noticed the difference in size of the pupils, the right pupil and palpebral fissure being smaller than the left. There has been no history of convulsions. *Present Condition*: Mentally the child is bright and the three other extremities are well developed. The right arm shows a flaccid paralysis with well marked "wrist drop" and hyperextension of the carpo phalangeal joint. There is considerable atrophy of the whole limb, and also shortening of the humerus fully half an inch in extent. There is a fair amount of movement in the deltoid and biceps. Examination under chloroform: Faradic battery, mild strength, gives fair contraction in the deltoid, biceps and flexors of the wrist, with very little if any response in the triceps and extensors of the hand and wrist. Sensation to pain and touch more or less normal. An interesting point in this case is the eye involvement, the presence of enophthalmos, which is due to pressure on the anterior roots of the first dorsal and lower cervical; and the considerable motor paralysis and poor development of the bone and little disturbance, if any, to sensation.

[Case IV.] A. G., aged five months, March, 1904, English Canadian. The child was recommended to me for consultation by Dr. Finley. It presented a flaccid paralysis of the whole right arm with "wrist drop" and ulnar deflection, and a considerable amount of rigidity at the shoulder joint, giving the impression that dislocation of this joint might be present. The paralysis has been present since birth. There are two of a family, and at their birth a considerable amount of difficulty was experienced on account of deformity in the mother's pelvis. Had the child examined by X-rays, but nothing abnormal

was detected in the joint. Full current faradic battery failed to produce any contraction in the muscles of the right or left arm. Sensation seemed considerably blunted.

[Case V.] C. C., aged four months, October, 1904. I saw the patient with Dr. G. H. Brown. There was present a well marked paralysis of the musculo-spiral nerve. The doctor informed me that he had considerable difficulty in the delivery of the child on account of the breadth of its sholders. He was aware that a considerable amount of pressure was applied to the axilla. Twenty-four hours after birth paralysis of the right arm was detected. On examining the child I saw the paralysis was more or less confined to the extensors of the elbow, wrist and fingers and the supinators. Sensations were considerably blunted. There were no eye symptoms and to-day the doctor informs me that, with treatment, very satisfactory results have been obtained. The chief difficulty lies in its inability to supinate the hand.

[Case VI.] B. M., aged three months, Irish, recommended by Dr. Rourke, July 29th, 1904. Complaint is made of paralysis of the right arm. History of difficult labour necessitating traction on the right shoulder; three days after it was noticed that the child had a considerable amount of hyperæsthesia in the right arm, and when touched cried a great deal. On examination by Dr. Rourke marked motor paralysis was present in the right arm with a suspicion of some shoulder joint trouble. On closer examination no joint affection could be detected. A week later a well marked "drop wrist" developed. The child weighed 14 lbs. at birth, September 13th. At this time the biceps, triceps and deltoid have made a good recovery, but there is still present a well marked "drop wrist," with a tendency of the fingers to go to the ulnar side. Flexion and extension of the fingers seem to be fairly good, but there is very little extension of the wrist.

The prognosis of these cases of brachial palsies is in the main good. Where there are considerable nutritive changes with motor and sensory paralyses of the whole plexus and eye changes, complete recovery may not take place; but for all that, a useful arm is likely to be obtained. Two or three years may elapse before the above results are reached. In the milder forms, where the paralysis is confined to the motor neurones; the prognosis is very good, recovery occurring in from nine to eighteen months. When one thoroughly appreciates the secondary changes that occur in the muscles and nerves of an extremity where the brachial plexus has been injured sufficiently to produce a severe molecular change in the constituents of the neurones, if indeed continuity has not been completely interrupted, the necessity for keeping those muscles and nerves in as perfect a state as we can is obvious till

such time as regeneration occurs. This can be done by means of support to the extremity as by splints, by massage and electrical treatment. This is, of course, much harder to carry out in the young than in the adult, but, fortunately, in the young regeneration is much more lively. Electrical treatment is not so well tolerated in the young as in the adult, and in children galvanism should be used. Begin at zero, afterwards, the poles being put on, it can be run up to 8 or 10 M.M.. In others a sedative or even chloroform has to be administered to allow of a proper treatment being carried out. Many an arm has been irretrievably lost partly by the mother's and partly by the physician's hesitation to cause the child so much discomfort as occurs when applying treatment. I saw a case where marked improvement took place in an arm that was supposed to be hopeless. The surgeon returned the flesh of the fingers and elbow to the child's chest so as to establish complete immobility. At the end of four months the arm was freed and the results were very satisfactory.

In the majority of young children faradic battery is of little use, so the galvanic must be used. In this way contraction is produced and tone of the muscle is kept up. Not only this, but the sensory nerves are stimulated, and in this way help the early return of sensation. In children where sensation has returned, or where it has not been absent, faradic and galvanic battery when applied with sufficient strength to cause contraction of the muscles very often gives the child so much pain that it is impossible to carry out this treatment. In such cases I would recommend that the child be placed under an anæsthetic at least twice a week and a very active and energetic treatment given. In some cases it is advisable to use needle electrodes so as to apply electricity direct to the muscles and nerves of the extremity. Along with this I always recommend the local injections of nitrate of strychnin. One can see at once the results of this remedy. I have noticed on several occasions that if the injection of strychnin be given a few minutes before the application of electrical treatment, a motor and sensory response is obtained with a smaller current than would be required if strychnin had not been given. Fortunately in the group of cases which I am treating at the present time the children bear the treatment wonderfully well, one only requiring an anæsthetic.

During 1904, 15,090 copies of Gould's Medical Dictionaries were sold, making the total sales to date 181,173.

ON CERTAIN PROBLEMS OF THE NERVOUS SYSTEM, MORE ESPECIALLY NERVE GRAFTING AND THE NEURONE CONCEPT.

BY

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During the past few years I have made a certain number of experiments on nerve grafting in its various forms, and as the union of divided nerves is of both theoretical and practical interest, I thought the members of this Society might be interested to know the present position of the problem. In treating it, I shall refer more especially to the work of others, because some of it is more recent and much of it more extensive and authoritative than my own.

The experiments on the union of severed nerves extends back to the time of Fluorens, 1828, since when a long line of investigators has been at work on this subject. The experiments of Schwann and others show that afferent and efferent fibres do not unite. As stimuli do not pass backward through motor cells, one can only learn whether there has been union of sensory and motor fibres by an examination of the nerve endings, and ascertaining whether they are of normal character or not. The more modern experiments have made it clear that certain precautions are absolutely necessary to avoid fallacious conclusions. It is very necessary to allow a long period of time after section before inferring that functional union may not take place. So strong is the tendency for the central to unite with the peripheral end of a divided nerve that, if this is to be prevented, special care must be taken, such as cutting out a considerable portion of the nerve between the two ends, turning the latter away from each other, and even suturing them to adjacent structures.

Among Continental investigators holding views that by many are considered extremely radical on the subject of nerve regeneration must be particularly mentioned Bethe, and perhaps most conspicuous among those of correspondingly conservative tendencies, especially as regards the neurone concept, is Langley, Professor of Physiology at Cambridge University. To his work and that of his colleague, Dr. Anderson, and to the researches of Bethe, I shall make special reference throughout this paper.

Langley and Anderson united the central end of a main muscle nerve with the peripheral end of a skin nerve and noted the results. To cite an instance: The central end of the crural was sutured to the peripheral end of the internal saphenous nerve. Seventy-two days later stimulation of the internal saphenous nerve at the knee caused contraction of the thigh muscles and extension of the leg. When the

(Read before the Montreal Medico-Chirurgical Society, Feb. 17th, 1905.)

internal saphenous was cut at the knee, stimulation of the upper end gave the effect as before; stimulation of the lower end was without effect. Langley and Anderson attribute the result to what they term an "axon reflex"; that is, they considered that there was in this case stimulation of nerve fibres, one branch of which was in the internal saphenous and the other in the muscle nerve. It is known that fibres which grow out from the central end of a nerve may divide, and it is conceivable that one branch may, in this case, have joined the muscle nerve, and that the other branch may have united with the internal saphenous nerve; or, that the central efferent fibres had grown more than seven cm. down the sensory nerve.

Bethe has experimented with similar results on mixed nerves. The reflex he obtained was explained by him on the assumption that there had been a direct union of the peripheral nerve fibres; that is, that afferent fibres of one branch had made connection wth a large number of efferent fibres in the other. He concluded that there had been no connection between the central nervous system and the peripheral ends of the nerves; and he was of this opinion because there had been no body reflex on stimulation of the peripheral nerves. But, as Langley and Anderson found an absence of such reflex in spite of a central connexion having been established, they considered the result inconclusive.

Bethe and others have demonstrated that cross union may take place, and that nerves may be artificially lengthened. He shows, for example, that the sciatic of one side may be united functionally with the sciatic of the opposite side, and Langley and Anderson united the peripheral end of the sciatic of one side in a rabbit, with the chief muscular branch of the crural, and found that after 398 days the crural on stimulation caused contraction of the upper part of the gastrocnemius. As the fibres of the crural are not long enough to reach the gastrocnemius, Bethe and Langley and Anderson concluded that short fibres are able to make functional connexion with long ones. In a rabbit a few days old the central end of the internal saphenous nerve was sewn to the peripheral end of the sciatic; 403 days later the sciatic was cut centrally of the first point of section and the peripheral end stimulated. Reflex body movement resulted, but there was no contraction in the muscles supplied by the sciatic nerve. A reflex was obtainable from the posterior tibial nerve at the ankle, so that it appeared that the different fibres of the internal saphenous nerve had united with the afferent but not with the efferent fibres of the sciatic.

In experiments on union between the spinal accessory and the sympathetic, it has been shown that the central end of the spinal accessory united indifferently with the peripheral end of the sympathetic, which Langley and Anderson interpret as indicating that the size of

nerve fibres may have a determining influence. In this case it would appear that small nerve fibres can more readily unite with large ones than large ones with small. As the result of numerous experiments on cats, lasting in one case over a period of 476 days, it has been found that the pre-ganglionic fibres of the cervical sympathetic, i.e., fibres central to the superior cervical ganglion, will not unite with post-ganglionic fibres. This shows clearly that the effects on the eye produced on stimulating the cervical sympathetic are brought about by the final neurones, which begin in the superior cervical ganglion; so that once again we have an illustration of the advantages of the neurone concept in comprehending and in teaching. Nevertheless the fibres of such a nerve as the phrenic can unite with the pre-ganglionic fibres of the cervical sympathetic.

Summary.

The results of various experimenters, notably those of Langley and Anderson, may be stated briefly as follows:—

All agree that no functional union can take place between the central ends of two nerves.

Bethe believes that functional union of the peripheral ends of two-limb nerves was demonstrated to have taken place in puppies, but Langley and Anderson could not get such union in rabbits and cats.

According to Langley and Anderson, when the central end of a limb-nerve has an opportunity of joining with two peripheral nerves, stimulation of one peripheral nerve, after complete severance of the joined nerves from the central nervous system, may cause contraction of the muscles innervated by the other. "We consider this to be an axon reflex set up in fibres from the central end, one branch of which has joined one peripheral nerve, and the other branch joined the other peripheral nerve."

When one of the peripheral nerves consists entirely of afferent fibres, an axon reflex may still be produced by stimulating it. Since efferent fibres do not, so far as is known, unite with afferent fibres, the axon reflex obtained supports the view that regeneration takes place by down-growth of axis cylinders.

Nerves may be lengthened by joining them with a corresponding nerve of the opposite side.

The phrenic nerve can unite functionally with the cervical sympathetic and the cervical sympathetic with the recurrent laryngeal, the functional result in all such cases being determined by the peripheral nerve; that is to say, in this case, for example, the result—no matter what part of the united nerve is stimulated—is that proper to the nerve of final tribution. In the case of the union of the cervical sympathetic with

the recurrent laryngeal the movements on stimulation are those that would naturally result from stimulation of the peripheral end; in other words, the movements in this case are due to the laryngeal muscles just as if there had been no division of the laryngeal nerve.

The fibres of the sympathetic in the neck central (inferior to the superior cervical ganglion) cannot, when the ganglion is removed, make functional connexion with those beyond the ganglion; that is, pre-ganglionic fibres cannot make connexion with post-ganglionic fibres.

Afferent fibres cannot unite with efferent so as to give motor effects; that is, afferent fibres cannot really coalesce with efferent fibres.

Whether the regeneration taking place when fibres of the same class are united is due to coalescence or to down-growth is as yet a matter of dispute.

At the meeting of the British Medical Association at Oxford this summer, Dr. Kennedy brought the results of his observations and experiments before the physiological section, and by the use of lantern slides of his preparations showed, as he thought, that there had been peripheral or autogenetic regeneration of nerves. His communication was not sympathetically received, and with one accord those who spoke on the subject rejected Dr. Kennedy's conclusions. It was claimed that it had not yet been shown that genuine medullated nerve fibres capable of nervous conduction had been formed in peripheral nerves.

So far as one can see at present, taking all the evidence into account, the truth does not lie wholly on either side. We must seek some *via media* of interpretation, or some new facts must intervene before we shall be able to formulate laws adequate to meet every case.

The Autogenetic Regeneration of Nerves.

The question as to the possibility of the regeneration of the peripheral end of a nerve after section, independently of the central nervous system, is an old problem, but it has of late become of more than ordinary interest, because, among other things, of its bearing on the large subject of the essential nature of the relations of neurones. It had to be decided whether, first, a nerve cut away from its central connexion with the spinal cord and its ganglion can reform medullated fibres; and, second, whether such fibres can become functionally active in the proper sense of the word; that is, whether they can become motor in a physiological sense. It has been shown that the peripheral end of a cut nerve, when sewn into the skin or left long amongst muscles, may make connexion with the central nervous system by means of the nerves of the surrounding cut tissues, although it makes no connexion with its own central end.

Vulpian was one of those who, after investigation, concluded against auto-regeneration.

Langley and Anderson express themselves as follows:—"We find that all the medullated nerve fibres which re-formed in the peripheral end of a nerve degenerate when the nerves which run to the tissues near to the cut end are cut near the spinal cord; in other words, in our experiments all the medullated fibres in the peripheral ends of the cut nerves were fibres which had become connected with the central nervous system. If, then, autogenetic regeneration of the fibres had occurred, every one of them had become connected with the central end of some nerve fibre. On the autogenetic theory this seems to us, in the highest degree, unlikely."

Bethe and Langley and Anderson agree that the number of medullated fibres formed in the peripheral end of a cut nerve varies widely, and that there may be none. This seems to be explainable by the naturally variable connexions with the central nervous system, and Langley and Anderson think it is not explained at all by the autogenetic theory. But that this conclusion must follow I cannot wholly agree, as every biological process is a varying one. Bethe claimed that regeneration up to the point of medullation occurred only in young animals.

A number of English observers took special precautions in their experiments that there should not be a central connexion formed. Head and Ham, for example, excised a considerable length of the radial nerve in cats, and found that at no time up to 249 days were medullated fibres formed in the peripheral end. There seems to be agreement on one point, namely, that the re-formation of new fibres takes place more rapidly near the *neurome* or point of section than in the periphery, but it has also been noticed that the connecting fibres between the central and peripheral ends have been made up in large part, in some cases, of non-medullated nerves, and yet the medullated variety may exist in the peripheral part of the nerve. While not admitting autogenetic regeneration, Langley and Anderson concede that "there is some evidence that the cut peripheral end of the nerve exercises a considerable influence on the formation of myelin."

Howell and Huber found that certain peculiar fibres formed during the stage of absorption of degeneration products. These ultimately disappeared, but in some cases it was shown that they might remain for two years or longer, and others have confirmed these observations. Langley and Anderson positively deny Bethe's assertion that in young animals the peripheral end of a nerve separated from the central nervous system may acquire a motor function, and though they admit that medullated fibres may reform in post-ganglionic fibres after excision of their ganglia, they state that these do not on stimulation cause any motor effects. They moreover think that those surgical observers who

have believed in peripheral regeneration have not been careful enough to exclude fallacies, one of which these authors, above all others, have been successful in proving to be real by experimental methods. They have shown that so strong is the tendency of nerves in the neighbourhood to send out young nerve fibres to cut nerves that such a union is only prevented by the greatest care, and that this fact has not been sufficiently reckoned with by such observers as Kennedy, Ballance, Stewart and others.

Inasmuch as so eminent an observer as Van Gehuchten states that he can confirm the results of Bethe, and as the latter are the most serious with which the opponents of the autogenetic theory have to reckon, it may be well to consider the objections of Langley and Anderson to Bethe's conclusions. They are not satisfied that the absence of central connexion, which they so much insist on, has been adequately demonstrated. The evidence for the absence of central connexion is chiefly two-fold: First, the absence of direct effect on stimulating the central portion of the nerve that had been cut; and, second, the absence of reflex effects on stimulating the peripheral end of the cut nerve. The reply made is that some other nerve may have established a central connexion, and, as regards the second objection, the absence of reflex effects, they point out that such were wanting in some of their cases in which an undoubted central connexion had been established, and further, that at a certain stage of union the conductivity of the functional portion is too small to establish the essential functional continuity. They admit, however, that their objections do not furnish an entirely satisfactory answer to Bethe's contentions; but they hold that their own experiments, as far as they go, are against the autogenetic theory.

The Neurone Concept.

These discussions on the regeneration of nerves bear closely on the neurone concept, and it may be worth while to consider what position one should take in regard to that subject as the result more especially of the histological investigations of the last two or three years. English observers generally do not seem to have occupied themselves with the question of the minute structures of the neurone to the same extent as continental investigators. Long ago Cajal stated that he had assured himself of the correctness of his views on the structure of the neurone, which were based largely on the use of the Golgi method of subjecting the same structures to the test of examination by the use of the methylene blue stain. This fact has given a special interest to the recent work of Turner carried out by the methylene blue method. There has been much difference of opinion as to the meaning of the networks that can be seen around the bodies of nerve cells, and which were described

by Golgi as far back as 1882. Some have held that these networks are nervous in nature; others, among whom is Golgi himself, that they are not, but are composed of neurokeratin, and have an isolating function; some again believe that they are of glial origin, while yet others hold them to be partly nervous and partly glial, a view rendered all the more probable by the recent advances in our knowledge of the structure and relations of glial cells.

If, as now seems clear, we must attribute improved nutrition, as well as supporting functions, to the glial cells, it is highly probable that the networks may be, at least in part, glial. Turner, using the methylene blue stain, believes the network to be glial in origin; others, however, believe that the axones unite with the Golgi nets, which, if true, would favour Held's view, that they may be partly nervous and partly of some other nature.

At the Cambridge meeting of the British Association for the advancement of science, held last summer, a vigorous discussion, opened by Professor Langley, on the nature of nervous connexion, took place. Professor Langley's arguments were largely physiological. He sees in the blocks or delays in nervous conduction that take place in or at the bodies of nerve cells, serious objections to the view of anatomical continuity, whether by networks, fibrils, or any similar mechanism. What impressed me most in this discussion, in which I myself took part, was the extremely conservative attitude of English physiologists towards the views of continental observers as regards the minute structure of the neurone. Dr. Alexander Hill, Master of Downing College, it is true, stated that he had been able to repeat successfully the histological work of Bethe, but he was swiftly borne down by the solid phalanx of opponents, who held by the older conception of cell contact, as set forth by Waldeyer in 1891.

There seems to be among English physiologists a belief in a sort of unlimited proclivity in reagents to produce *artifacts;* but surely, when so many methods have been employed and so many highly competent Continental and other observers agree up to a certain point, to reject all the later conceptions is to carry sceptism to a degree when it ceases to be a scientific virtue, all the more as most English physiologists have not, so far as we are aware, themselves made special investigations on the minute structure of the cell. For myself I can no longer believe the conception of the neurone, as set forth by Waldeyer, to be entirely adequate, and to this state of mind I am brought by a consideration not only of the work of many others, carried out by different methods, but also of the results of my own observations on many different parts of the nervous system, by the use of different methods, and now extending over a considerable period of time.

Here I would like to put forward again a suggestion of mine, made to the American Physiological Society more than ten years ago, that the large, well-equipped laboratories of the various countries of the world might, to the great advantage of science, combine to work together in attacking large problems from different points of view, and by the use of various technical methods. We might also have international co-operation. Till this is realized, much of the energy available for the advancement of science will be more or less wasted. I have noted with great satisfaction that Dr. R. E. McKechnie gave expression to a thought akin to this at the meeting of the Canadian Medical Association in Vancouver last year.

AN UNUSUAL CASE OF INJURY TO THE CERVIX UTERI DURING LABOUR.

BY

J. B. Browne, B.A., M.D.

My apology for bringing the present case before your notice is that, bearing this instance in mind the accoucheur may be led to detect and correct any similar cases liable to occur in his practice.

Although the process of labour, being a physiological one, should be carried out in a completely physiological manner, that is, without presenting any pathological condition whatever, nevertheless the presence of injury to the maternal parts has become so common-place as to be regarded at times almost in a physiological light. That this should not be the case we all admit, but whether it be the increasing magnitude of the infantile brain-cases, whether it be the diminished proportion of the maternal passages, or whether at times the unskilful management of the accoucheur, this increasing complication warrants some consideration.

This evening we shall confine ourselves to some of the injuries liable to occur to that wonderful mechanism—the cervix uteri. Here the most common are the lacerations of the external os, but I wish to bring before your notice a laceration occurring above the external os brought about by similar forces under modified conditions.

Patient, Mrs. E.—, act. 23, primipara (a private case), had presented a normal pregnancy up to the time of admission into the hospital, except that on the morning of the day before entrance the membranes had ruptured. Patient entered the Maternity Hospital November 24th, and had not been previously examined. Pains started at 11.30 a.m. At three p.m. a high enema was given, which unloaded the rectum.

Read before the Montreal Medico-Chirurgical Society, February 3, 1905.

Soon after the enema, pains increasd in frequency becoming bearing down in character. Child delivered spontaneously at 6.30 p.m., with patient in lateral position. On changing patient to dorsal position a rather profuse hemorrhage occurred for a few minutes, without there being any discernible cause, as the fundus was well contracted and the pulse continued normal. Temperature and pulse remained normal, though the flow continued very free and light red in colour until the second day, when it became moderately red, and continued rather more red than usual until the twelfth day. All went well until the seventh day, when the temperature rose to 100, but pulse remained stationary at 80. On the eighth day ergot was given, and one large blood clot was passed. Ergot was increased to thirty drops four times a day. In spite of this, and with the fundus well contracted, temperature and pulse gradually rose, till on the tenth day temperature was 102 and pulse 95. As lochia remained more red than usual and the uterus was well contracted, the hæmorrhage was assumed to be outside the endometrium.

On the morning of the eleventh day a careful internal examination was made, and the following condition was found:—Perineum intact, discharge in vagina foul, external os patulous, but not dilated beyond the size of a five cent piece. On the posterior wall of the cervix in median line, and well above the external os, a deep, sloughy laceration was felt extending through the posterior cervical wall, and from it slight oozing was taking place. The uterus felt well contracted, both fornices normal. The vagina was packed with iodoform gauze, and the patient prepared for operation the following day.

What had then taken place was that the child and placenta had been delivered through the laceration instead of by the cervical canal.

Operation, December 6th, 1904:—Anæsthetic, alcohol, chloroform and ether, changed to ether owing to signs of cardiac weakness. Patient in Sim's position. Catheterized gauze removed from vagina showing bloody discharge with foul odour. Creolin vaginal douche given, and Sim's retractor inserted, drawing back the perineum. Silk-worm gut suture then passed through the anterior lip of the cervix, and left long to draw the cervix down. A second retractor was then used to enlarge the transverse diameter of the vagina giving a good view of the cervix. The cervix was patulous, external os dilated only sufficiently to pass in a large sound. On the posterior aspect of the cervix, beginning 2 c.m. from the external os and extending up to the vault of the vagina parallel to the axis of the cervix, there was a laceration about 5 c.m. in length completely through the posterior wall of the cervical canal, so that a sound passed through the external os appeared through the wound.

The wound was a sloughy, crater-like depression covered with granulation tissue, showing evidence of repair, rather inverted, and when separated the interval appeared filled with new granulation tissue. The edges of the wound were freshened by scissors and curette for one cm. on either side of the wound with special attention to the angles, and the edges coapted by means of five deeply placed sutures. These readily controlled what little hæmorrhage there was. The cervical canal was then explored, and found sufficiently patent to admit a douche nozzle, and an intrauterine saline douche was given, at the same time thoroughly cleansing the vagina, and the patient made comfortable with temporary vaginal drain of plain gauze.

Explanation.—In considering why this laceration resulted instead of the usual dilatation of the cervical canal, four factors stand out in relation of cause and effect.

(1) That the patient was a primipara.

(2) The presence of dry labour with the absence of the dilating force of the bag of waters.

(3.) Direction of the force being focussed on the posterior wall of the cervix and not directly over the cervical canal.

(4) Powerful uterine contractions.

In considering these factors, the first was of some importance in that the patient being a primipara, the canal would be more difficult to dilate. Then, again, had the membranes been unruptured the vis a tergo would have been equally distributd to all parts of the cervix following the law of pressure through fluids and not been concentrated at any one point, as was the case here.

Thirdly, had the axis of the fœtal ovoid been directed behind the long axis of the cervical canal, as is liable to occur when the fundus of the uterus is placed more anteriorly, as in pendulous abdomens, or where the lower part of the cervix is drawn up anteriorly from any cause, the force of the presenting parts would fall on the posterior wall of the cervix. This force being continued the posterior wall would be distended, for the longitudinal fibres of the uterus would draw up the anterior portion of the cervix, and distention of the posterior cervical wall become more and more evident leading to distinct capping of the same. That this condition does frequently take place is evidenced by how frequently we find the external os unusually easy to reach with the examining finger when the anterior wall is distended and the posterior wall drawn up. We have all found this to be the case at times. This then would lead to a bagging of the posterior wall and subsequent thinning so as to make laceration here more likely.

Fourthly, violent uterine contractions with these conditions present would be the culminating force resulting in the presenting part of the

head being driven through the posterior wall in this position, the rent extending till of sufficient size to allow of the passage of the head and body of the child. This laceration, then, had extended in the axis of the cervical canal down almost to the external os and upward to the extreme limit of the internal os, whose reinforced fibres evidently prevented its extending directly up into the body of the uterus, and as the peritoneum had been drawn up as the uterus enlarged in the early months of pregnancy, the peritoneal cavity was not opened.

Another question which arises is why was the hæmorrhage not more severe? At no time was it alarming, and scarcely more than is apt to occur in an ordinary case. To answer this we must bear in mind that the laceration was in the middle line. Now, had it been to one side, some of the larger branches of the uterine arteries would likely have been torn, but in the middle line is the spot where these vessels are smallest, as it is here the anastomosis of the smallest terminal ends of the two uterine arteries takes place, hence only these smallest radicals would be torn and little hæmorrhage result.

Are there any lessons to be learned from the above case?

(1) That in every case of dry labour in a primipara with excessive capping of the cervical wall laceration is liable to take place, and this danger may be diminished by early dilatation of the cervical canal.

(2) That every case where fresh hæmorrhage occurs after delivery at all alarming, especially where involution of the uterus is good, should lead to a careful examination of the genital canal to discover some possible source outside the endometrium.

Prognosis.—Depends on the amount of scar tissue formed. In this case it was slight. It should warrant careful watching, and, if necessary, aid by dilatation.

Is it not possible that similar instances to the above may occur more frequently than we hear of, and not be detected?

My sincere thanks are due to Dr. J. C. Cameron for his kindness in allowing me to follow up this case and publish this report.

W. W. Chipman, M.D.

I should like to ask whether or not there was any sign of cicatrix at the two extremities of the tear, or any indication that the external os might have been at first involved in the tear, and the subsequent position of the tear have resulted from the fact that the healing of a very deep laceration began immediately in the neighbourhood of the external os. Evidently a tear five cm. in length would not permit the passage of a full-term foetal head; there must have been an almost inconceivable degree of stretching, or a much larger tear, which in part had healed. I should like to ask if there was any special anatomical reason

for the unusual situation of the tear, for example, any abnormal rigidity or malformation about the external os. As I have understood the report, we are told that the child's head had entered the canalized cervical canal, and then, instead of following this canal, had passed backward, forcing its way through the tissue of the cervix. The tear, we are told, did not involve the lower uterine segment, which is structurally the weakest part of the inferior pole of the uterus. It is certainly a very unusual case, and to my mind quite a singular one.

We all know the classical case which is figured in text-books where, in an instance of a very long and rigid perineum, the child's head forsook the vaginal canal and passed directly through the perineum, the child being so delivered, but, as for the head coming down through the posterior wall of the cervix, that is indeed a very singular occurrence.

DR. BROWNE.

I may say this is a patient of Dr. Cameron's, and I only report it here through his kindness. From our own observations, this seems to be an unusually rare case, and we have been unable to come across any similar one. The case came into hospital under urgent circumstances, as mentioned in the history, and no examination could be made before immediate delivery. With regard to the wound not being sufficiently large to admit the passage of the head, a fact to be borne in mind is that no examination was made until ten days after confinement, when almost complete retraction had taken place, a fact which, I think, easily accounts for the small size of the wound. I also think it impossible, from the appearance of the wound, that it ever extended through the external os and had healed. There was a firm bridge of tissue between the external os and the laceration. At the same time there was a foul, sloughy discharge present, and the healing was certainly not akin to anything like first intention, and healing by second intention in such a short space of time would scarcely be likely. There was no sign of cicatrix at the angles of the wound.

A CASE OF ATRESIA OF THE PULMONARY ARTERY WITH TRANSPOSITION OF VISCERA; A SECOND CASE OF TRANSPOSITION.

BY

JOHN MCCRAE, M.B.

It is not often that one obtains such a rare specimen. It is a combination of two rarities, transposition of the viscera and an anomaly of the heart. First, to deal with the heart anomaly; of all anomalies, it is fairly well known that the commonest is a stenosis or an atresia of

Read before the Montreal Medico-Chirurgical Society, Feb. 17th, 1905.

the pulmonary artery. Of these two, atresia forms about one-sixth of the combined cases; of all atresias again, perhaps one-seventh show the condition here present, namely, that the pulmonary artery is reduced to a mere fibrous cord having no lumen. Of all these cases, the common condition is that the septum ventriculare is open, that the foramen ovale is also open, or the septum dificient. This case has a closed septum ventriculare. Vierordt, who wrote the section on the congenital heart diseases in Nothnagel's System, finds 12 cases of this, and 8 of these had been already collected in 1869 by Peacock. Of all the cases with this peculiarity it is observed that the large majority have lived less than a week. Hare's case, in 1852, lived 9 months, the present case lived 7 weeks, another lived 6 weeks and all the others of the 12 lived only about a week or less. If we add to this condition the fact that an entire transposition of the viscera occurred, I presume the rarity reduces itself to be, not one of 13, but absolutely unreported hitherto. Two cases are reported, one by Ollivier, the other by Wardrop Griffith, in which transposition occurrred with a congenital heart lesion, but these two differ in their particulars considerably from the present case.

As to the history of the case, it was the 15th child of a 46-year-old mother. She was of low intelligence, and had a hare-lip; otherwise nothing particular was noted. Before delivery, Dr. Evans demonstrated to the students that there was present a systolic heart murmur in the foetal heart. This was verified after birth, and continued during its life. It was born a "blue baby" and remained so, being particularly blue just after feeding. It died of broncho-pneumonia on the 49th day. The heart is practically, though not morphologically a fish heart, that is, there is only one article and one ventricle for working purposes, and all its chambers are reversed.

With regard to the other organs, they are all reversed with the exception of the gall bladder which lay upon the right side of the suspensory ligament of the liver. From the deformities in the heart, though the heart itself was transposed, the apex beat was in its normal place to the left of the sternum.

As to the Situs Inversus, it, of course, is in itself a rather unusual condition. Dr. Fry presented a case in 1903 before this Society, which also had some congenital lesion of the heart, probably a relative stenosis of the pulmonic vessel. It is probable that there are about 300 cases of Situs Inversus on record, but it is not by any means common. Arneill, in 1903, sent out circulars to 34 of the foremost physicians in America, and in the replies, 37 cases had been noted by these men, 31 in life and 6 after death. Some had seen no case at all, though their

experience had extended over many years. In April, 1904, I did a rather hurried autopsy at the Montreal General Hospital on a female patient aged 40, who died of pneumonia a few hours after entering. This was a case of complete transposition of abdominal and thoracic viscera. On account of the short time given us for the examination no photographs could be obtained, nor could organs be removed for preservation. While a house surgeon in the Toronto General Hospital, I saw a case which was evidently one of transposition. It was in the living subject and the heart and liver were certainly transposed, so that it was probable that there was complete transposition of all viscera.

A CASE FOR DIAGNOSIS.

BY

JAMES BELL, M.D.,

Professor of Clinical Surgery, McGill University, Surgeon to the Royal Victoria Hospital.

The patient is a young man, aged 31, of good family and personal history. He had been perfectly well up to March last when pain began over the lower part of the sternum, radiating from above downwards. This passed away, and on June 20th he consulted a physician, who found only some slight tenderness over the sternum. On July 9th he again consulted the doctor, and by this time three separate little hard nodules had appeared in the skin over the lower part of the sternum. On August 15th enlarged glands were discovered in the axilla, and on the 25th the physician found a marked prominence along the lower border of the right pectoral muscle, and the little nodules were now ulcerating. A band of dilated venules ran across the lower part of the chest. The doctor then sent him to me with a diagnosis of probable malignant disease. I sent him into hospital on the 29th of August, and at that time no other lesions were found except those already described, save that the nodules were superficially ulcerated. I was satisfied that the condition had begun in the skin in these small nodules, from which, after ulceration, infection had extended along the lymphatics.

Dr. Martin saw the patient with me, and he thought that there was probably slight enlargement of the mediastinal glands beneath the upper portion of the sternum, as indicated by the altered percussion note. It was clearly an infection of some kind, but what it was was hard to say. I carefully investigated the question of syphilis, but there was no history to lead one to that conclusion, and the lapse of time since the appearance of these nodules without any secondary symptoms makes it appear impossible, as also does the further progress of the disease. My next

thought was glanders, but here also there was nothing to indicate this condition; it did not seem to be tuberculosis, and we could easily exclude actinomycosis. On September 10th I excised a gland in the axilla, which was as large as a pigeon's egg, and had it examined by Dr. Keenan, who reported that it contained only inflammatory tissue. On August 30th one of the small nodules was removed and inflammatory tissue only was reported by Dr. Keenan. At this time the patient had a leucocytosis of 21,500. All the organs were normal, he had no fever, was not depressed except for the feeling that he had some very serious disease. On October 3rd I removed a large area, including the three small nodules and the greater part of the right pectoral muscle. It was then found that infiltration had extended into the muscle from the glands. All this time there was no pus. The patient took large doses of iodide of potassium for about a month without any apparent effect, and on October 16th he was discharged. He remained in good health and gained five or six pounds, returning on the 7th of January.

Dr. Martin saw him again with me, and we found evidences of effusion into the lower part of the left pleural cavity. The gland had increasd considerably in size, and now other glands had become involved. We decided to remove the more recently enlarged glands in the hope of getting some further information there at this early stage, and on January 9th this was done, together with opening the mass which had developed over the upper part of the sternum since he left hospital. In both these areas pus was found. Cultures from the glands were sterile, the gland substances simply showing inflammatory tissue. Dr. Keenan found a bacillus resembling a form of leptothrix. The patient now had a leucocytosis of 22,000. Injection of the pus into guineapigs gave absolutely negative results.

The whole history has been that of a healthy man with slight pain over the sternum, the development of a few small nodules over that area, apparently in the skin, and from these extension had been apparently along the lymphatics. Now there are several of these nodules, and there is involvement of the glands of the neck and mediastinum. It has been an entirely afebrile condition; there is nothing in the signs or symptoms to lead me to suspect a malignant disease; it seems to be definitely an infective granuloma, but what, I am not prepared to say. There is no tuberculosis, we cannot demonstrate glanders, it is not syphilis, and it is certainly not like actinomycosis; it seems hardly possible that it is a lympho-sarcoma.

I think that the real fact of the matter is that as long as a sarcoma remains encapsulated there is little tendency to spread by the lymphatics, but once it bursts or gets beyond its capsule, extension occurs in this way.

One sees sarcoma of the testicle in young boys where up to a certain point there is no sign of involvement of the lymphatics at all, but in a few weeks one may find a mass of retroperitoneal glands in the neighbourhood of the stomach showing distinct evidences of lymphatic extension. In a case like this, if the limb was amputated early while the growth was still encapsulated, there would be no extension, but, if allowed to go on, the capsule becomes destroyed and extension quickly follows, though there may be an insufficient capsule to begin with in certain tissues.

GEORGE D. ROBINS, M.D.

With regard to glanders, here are certainly some points in its favour, but, on the other hand, there are certainly great objections to making a definite diagnosis of glanders. The superficial, acne-like lesions, very slow in developing, are certainly suggestive, so, too, is the pus from these lesions, which is sterile or nearly so. Glanders is a disease which is contagious in a mild degree, probably only directly so, and the present patient, I believe, has had nothing in particular to do with horses; practically all cases of human glanders are derived from infection by horses, mules or asses, and in this case there is an absence of any history which would suggest such an infection; this is therefore strongly against such a diagnosis. That one has chronic suppurative lesions in glanders is a very common occurrence. The lesions are to be found in the lower extremities first without intramuscular abscesses developing, whereas in the present case they are in the upper extremities. I would like to ask Dr. Bell if mallein has been tried in this case, and if so, with what result.

E. W. ARCHIBALD, M.D.

Dr. Bell very kindly gave me an opportunity of seeing this case last fall. The primary lesion had apparently been intrathoracic. I refer to pain underneath the sternum, which later disappeared. This was partly confirmed by Dr. Martin's finding a dull percussion note over the sternum. The next symptom was the appearance of these nodules in the skin of the thorax, and following that the gradual and progressive development of glands in both axillæ, and finally higher up along the chain of glands in the neck; with all this was an afebrile course. I saw the microscopical sections of the first gland examined, but could make no definite diagnosis. I made a clinical diagnosis, however, to myself, of sarcoma, beginning in the mediastinum, forming metastases by way of the lymphatic communication between the mediastinum and the thoracic wall, and finally spreading thence to the axillæ.

To judge from the histological picture, it was apparently not an

ordinary sarcoma, but I thought of it as belonging more likely to those transition tumours which are called by so many various names—Hodgkin's disease, adenia, lympho-sarcoma, etc.—and between which in our present state of knowledge no sharp line of demarcation can be drawn. When the patient returned some months later, and when what looked like pus was found in the swollen glands, it seemed for the moment that this diagnosis had been wrong, and that the case might be one of glanders. However, the absolutely negative results obtained by Dr. Keenan, both bacteriologically and from animal inoculation, proved the error of this last supposition, and it seemed justifiable to return to the first diagnosis. Three years ago I was able to isolate without difficulty the bacillus mallei from the six months old sinuses of a case of human glanders—the one sent in to the Royal Victoria Hospital by Dr. Robins, and also to obtain easily the characteristic lesions in guineapigs. So easily, indeed, that I am convinced that in the present instance, if glanders were present, it could not have escaped Dr. Keenan's careful investigation. We know, on the other hand, that certain cases of progressive gland tuberculosis may give a picture much resembling the present case; and although occasionally we do meet with tuberculous glands, where the ordinary histological signs are quite wanting, still there is nothing in the sections of this case which points that way. It remains then to decide between infective granuloma of unknown causation and malignant disease of a sarcomatous nature. And my reasons for believing that the condition is one of malignancy are these: it is a progressive glandular overgrowth, which has broken through the gland capsule and has infiltrated muscle, which being removed (over the sternum) has promptly recurred in the immediate nighbourhood, one may say locally, and which has been afebrile in its course. If one must give it a name, lympho-sarcoma, to my mind, comes the nearest to defining it. The histological report of "inflammatory tissue" can have no weight against a diagnosis of lympho-sarcoma, for it is often difficult to separate the two. The leucocytosis speaks as much for malignancy as for infection. Finally, the pus-like contents of the glands last incised, in the absence of bacteriological proof, are found as well in soft lymphomata as in infectious granulomata.

C. B. KEENAN, M.D.

We meet with much difficulty when attempting to form a diagnosis from the sections removed from this case. The wall of the ulcer and surrounding tissue showed the changes characteristic of simple inflammation. There was some new formation of fibrous tissue, and much small-celled infiltration, chiefly mono-nucleated lymphocytes. The lining endothelium of the smaller vessels was often swollen so as to

completely occlude the lumen. Cultures and smears showed staphylococci only. An axillary gland removed later resembled closely the histological appearances of a gland in Hodgkin's disease; in other words, the picture of a gland subjected to chronic irritation. There was marked fibrosis and proliferation of the endothelium, and a corresponding decrease in the lymphocytes. There were a few large cells containing two or more nuclei and very many eosinophiles. Sections of the thickened portions along the edge of the pectoralis major gave an appearance more suggestive of sarcoma.

Here one sees a hyaline degeneration of the muscle bundles, and later small areas of small round cells appearing among the muscle bundles. These cells resembled greatly those seen in inflammatory infiltrations. Also the muscle is replaced in places by adult fibrous tissue. There are very many dilated lymph spaces and many large cells resembling endothelial cells. There are very many polynuclear leucocytes and eosinophiles; no bacteria could be made out in the sections.

The gland removed from the neck at the last operation showed to the eye a necrotic area in the centre. Microscopically, one sees degenerated material in the centre, and surrounding this is a zone of degenerated cells with much nuclear fragmentation. Around this again is a zone of young fibres tissue cells and lymphocytes. No giant cells were present, nor were bacteria found in smears or cultures. Intraperitoneal inoculations in male guineapigs gave no result, which excludes glanders. Tuberculosis is excluded on the histological appearances of sections and absence of tubercle bacilli, and actinomycosis on the same grounds. The appearance is not that of any malignant tumour and certainly the histological appearance of the sections conforms in every way to the picture usually supposed to be typical.

As to the question of spread by the lymphatic glands, my experience is exactly in conformity with Dr. Archibald's. Sarcomata do spread by the lymphatic glands, and the round-celled sarcomata are specially apt to do so.

C. K. P. Henry, M.D.

A case I remember has many points similar to Dr. Bell's. The various glands in the axillæ and cervical regions were removed, and at no time were they of such a nature that a diagnosis could be made. Some of them presented an appearance of sarcoma, whereas most of them were of the simpler inflammatory type, and the larger ones had centres such as are mentioned by Dr. Keenan. In this case arsenic gave rather beneficial results. The patient took it for a long period of time, and at his worst there was a marked improvement following this treatment. He has kept it up, and now when he stops for a short time the glandular

enlargement becomes more acute. Thinking of the beneficial results of arsenic here, it occurred to me that it might possibly be of service in this case of Dr. Bell's.

DR. BELL.

There are some points in the history which I would like to set straight. This patient was sent to me with a diagnosis of sarcoma of the mediastinum, and it was with the knowledge of that fact that Dr. Archibald saw him with me soon after his arrival here. Dr. Archibald was under the impression that the pain was intrathoracic. After the most minute and careful examination, I have satisfied myself that it was not within the chest, but external. I do not think this can possibly be a mediastinal sarcoma, because up to the time of his leaving there was absolutely no interference with the respiratory or circulatory functions; the most that could be found was that the dulness over the upper part of the sternum was a little greater than it should be, suggesting that there was probably extension to the deeper glands, and glandular enlargement in that portion of the mediastinum; even now, although he has suspicious but uncertain evidences of effusion in the base of the left pleura, yet his breathing is good. and there is no marked interference with the respiratory or circulatory systems. Another feature is that these definite foci are limited to the skin.

The question all along has been the question of malignancy versus granuloma or some other infective condition. I have made up my mind that it is not a malignant condition, but it is quite impossible to say what diagnosis to make, as all the evidences are against glanders, actinomycosis, syphilis or tuberculosis. Thus there is nothing to explain it, if it is not a malignant condition, and the evidences in favour of this are indeed small, namely, the infiltration of the infected gland into the muscle substance, but, on the other hand, a definite limitation to the lymphatics of the neighbourhood and a distinct extension from these original foci along the lymphatics seem to make that very doubtful. Mallein has not been tried, nor has tuberculin. A point in opposition to its being glanders is that it is limited to the one chain of glands. The question of access to horses is not so important, though we knew these cases are generally found in men who have dealings with horses or other animals which are liable to have glanders. We must admit the possibility of infection through a mediate source not directly from the animal. With regard to the condition of the patient mentioned by Dr. Henry, I hardly think that was an analogous case; there was no lesion except in the superficial glands in all parts of the body, whereas here only the lymphatics of a certain area have been infected, and that infection has extended from a recognized focus.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

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VOL. XXXIV. MARCH, 1905. No. 3.

INSANITY AND POLITICS.

The American Medico-Psychological Association meets in San Antonio, Texas, on the 18th of April, under the presidency of Dr. T. J. W. Burgess, Superintendent of the Protestant Hospital for Insane, Verdun, Montreal. This is the oldest Medical Association in America, and is the one which met in St. Louis last year, in Washington in 1903, and in Montreal the year before that. Dr. Burgess will be called upon to deliver the annual address. We do not feel especially commissioned by Providence to put words in his mouth, or to invent for a man of his fecundity of imagination injurious language which might be employed against the community in which he dwells. Yet we desire to lay before Dr. Burgess a few facts which may have escaped his notice, and may serve as a text.

Most persons will admit, unless they are incapacitated by congenital

perversion, or political prejudice, that a hospital for the insane exists —pun or no pun—for the purpose of extending hospitality to the insane, and not to the protegees of a political party. In short, it is mental not political degeneracy which entitles an entrance to the enjoyment of such hospitality as it can offer. In Canada, there are to-day eighteen hospitals for the insane, and all but six exist for the combined care of the insane and the politicians. In twelve the present superintendents owe their appointments to influences other than their attainments in psychiatry.

Let us be more specific, and deal first with those six institutions whose superintendents have been chosen from the ranks of the regularly qualified assistants. The most recent instance is the choice of Dr. J. V. Anglin as superintendent of the New Brunswick Hospital. As every one knows, he won his promotion by ten years' service under Dr. Burgess at Verdun. Dr. W. H. Hattie, superintendent of the Nova Scotia Hospital, was formerly assistant in the same institution. Dr. G. H. Manchester, who is now in charge of the British Columbia Asylum, also gained his experience at Verdun, and Dr. Burgess himself was sixteen years in the Ontario service before he obtained his present position. In the Province of Quebec he stands alone in respect of previous experience. In Ontario there are nine institutions for the care of the insane, and in only two have the present superintendents had a regular training in their work. These are Dr. C. K. Clarke in Kingston, who succeeded to the position rendered vacant by the melancholy death of Dr. W. G. Metcalfe, and Dr. N. H. Beemer, of Mimico, who was promoted from London, where he had been assistant.

Turning now to the institutions whose superintendents have been appointed from other considerations than previous training, we shall begin near home. At Longue Pointe Dr. Villeneuve succeeded to Dr. Duquette, after a year's experience as visiting assistant, though he had other qualifications; and at Beauport, in Quebec, the present superintendent is not even in residence. He practises in the city, and merely visits the institution daily. For that service he enjoys a salary considerably larger than many officers receive for entire devotion to their duties. In Prince Edward Island the situation of Dr. E. W. Blanchard, one of the most competent men who ever superintended an asylum, was made intolerable to him, and he resigned, to be succeeded by a recent graduate of a small Ontario school with no experience either in psychiatry or in general practice. At Selkirk, Mr. David Young is an inheritance from the days when a few insane persons were confined in the old Stone Fort, and at Brandon the present superintendent was drawn from the outside ranks. Of the nine asylums in Ontario, only two—Kingston and Mimico—have superintendents who were qualified

at the time of their appointment. In London the late Dr. R. M. Bucke was succeeded by Dr. MacCallum, who up to the time of his selection had practised medicine at Dunnville. Dr. J. Russel practised at Binbrooke before his selection for the control of the Hamilton Asylum. Dr. J. B. Murphy, of Brockville, who died only a few months ago, had been a general practitioner in Belleville. Dr. E. C. McNicholl, who was appointed to the Cobourg Asylum, which was opened only in 1903, had no previous experience. The same is true of Dr. Daniel Clark, Toronto; Dr. A. H. Beaton, Orillia, and Dr. Spohn, of Penetanguishene.

The answer which the politicians make to all protests is that the men who occupy the posts of assistants are not sufficiently qualified to become superintendents. This is partly true, and because it is partly true the case is the worse, because, if there are incompetent men amongst the assistants, it was the politicians who put them there. But the answer is inadequate, because, in spite of the politicians, there are enough good men to fill every vacancy which may occur during this generation. The wonder is that there are any remaining, when they have seen themselves passed over time and again by men whose attainments were unproven. The rewards of the specialty of psychiatry are small enough, and should not be filched away. The injustice is not chiefly to the men who have spent a life-time in acquiring a knowledge of the insane, of their diseases and of their treatment; it is to the wretched insane themselves, who are deprived of that experience which might aid in their recovery.

We yield to none in our admiration of the general practitioner. We are aware of his energy, his resources and his fidelity, but not even the general practitioner will lay claim to a capacity for treating off-hand and to the best advantage grave lesions of the eye and ear or of the more secret parts of the body. He should adopt the same attitude towards the brain. In time it will come to be a shameful thing for a general practitioner to accept a position for which he is not qualified, since thereby he is committing a wrong towards his colleagues and towards his patients.

The ideal service is that which prevails in New York. The superintendent is appointed by the board of management, and he must be selected from men who have served at least five years, and have proven their capacity and instinct for such work. The assistants in turn are appointed by the superintendents, and they obtain advancement according to their merits, no step in advance being made unless the candidate has had previous experience in the specialty, and proved his fitness by passing an examination before promotion. In Canada we have no system—not even a bad one. In view of recent political events which have happened in Ontario, if Dr. Burgess made a protest before the whole profession, it might not go unheeded.

THE LEPERS AT TRACADIE.

Save when an annual report awakes our interest, we are apt to forget that interesting colony in New Brunswick, of which Dr. Smith has just published the yearly statistics. The lazaretto contained, twelve years ago, eighteen patients, and to-day contains fourteen. In a neighbouring parish Dr. Smith has found one definite and three probable cases. Last year's admissions were three in number, and the deaths in the institution numbered four. It will probably be many years before the need for the settlement passes away, although progress for a long time has been satisfactorily setting in that direction.

One case has actually undergone spontaneous cure, though the results remain. Attempts at treatment have been limited to Chaulmoogra oil, which was introduced into the colony two years ago, and its results are spoken of with much favour, especially because under its use erysipelas and leproic fever have become very rare accompaniments of the disease.

The present fourteen cases consist of nine men and five women, varying from ten to sixty-two years of age. By origin, nine are French, three Icelandic and three English, the total of fifteen including the case above mentioned as cured, who is constantly allowed out on leave of absence. Four of them are blind from ulcerations of the disease or from iritis, but those whose physical condition permits are encouraged to do light work around the institution, and even to enjoy the relaxation of sailing in the harbor.

Had further evidence upon the communicability of the disease by contact been required, it is supplied by the researches into the circumstances of all the cases, which have been made by Dr. Gurth. The disease has spread by failure to segregate lepers, and, when proper segregation has been carried out, it has been checked. The duty of maintaining the institution will lie upon the country for years to come, but in pursuing the present methods it is likely that the shortest way is being taken towards dispensing with it at some future date.

One of the latest governments to face the leper question is that of the State of Louisiana, which has erected a lazaretto, stated to be remarkably complete and modern in its equipment and methods.

THE NEW PROVINCES.

A communication signed "W. H. SCOTT, M.D.," has been appearing rather freely in the daily newspapers. As the subject is one of purely professional interest, it might be thought that sufficient publicity could be obtained through the medical journals. The question which is troubling Dr. Scott is the status of medical men in the North-west

Territories, if the autonomy of a province be granted to that important part of Canada. He contends that the new province should not be permitted to manage its own medical affairs, and possibly exclude from practice medical men who are now resident in the older provinces. Dr. Scott appeals for "advice and suggestions," therefore we feel free to say that the new province will be entitled to precisely the same privileges as are enjoyed in Ontario and Quebec.

The objections which Dr. Scott puts forward are that these territories were purchased by Canada as a whole, and that they are inhabited mostly by "foreigners." Those who remember the provincial subsidies which were paid at the time of Confederation will remember that the older provinces were also purchased, and that the inhabitants of the territories have been pretty well taxed ever since to pay the price.

The second objection is conceived in the true Ontario spirit—that the inhabitants are foreigners. Indeed, we in Quebec have frequently been placed in the same category. All of us in Canada at one time or another were "foreigners," but we are none the worse citizens for that. The remedy for the absurdity, of course, is a registration, which is good for the whole Dominion, and if Dr. Scott and his friends would apply their minds to that problem they would be more usefully employed.

THE UNION BANQUET.

The dinner which was given on the evening of February 21st, at the Windsor Hotel, by the Montreal Medico-Chirurgical Society and La Société Médicale de Montréal, was an event in the professional life of the community, which in time will be regarded as worthy of remembrance. It was the first occasion in the history of the senior society, now extending over a period of seventy years, upon which both elements in the profession, French and English, came together as one body. That is why we say the event will be memorable when finally French and English come together permanently.

The arrangements were carried out in a large imaginative way. The toast to the English Society was proposed by a Frenchman, who spoke English, and the French Society was proposed by an Englishman speaking in a language which passed for French. Dr. Buller's address was a heroic effort, and it was listened to with the utmost of politeness by English and French alike.

In the absence of the Dean, on account of illness, Dr. Shepherd replied for McGill University, and it could not have been done better. He recalled the early days of the medical faculty, when lectures were given in both languages, especially by his own predecessor in the chair of anatomy, Dr. Bruneau, and he mentioned a rule which is yet in

force, that examination papers may be written in both languages. Dr. Armstrong developed the same theme in the admirable account which he gave of the early history of the Medico-Chirurgical Society. He announced, what was news to many, that it was the custom to employ two secretaries, and that to this day the minutes of the early meetings stand on alternate pages in French and English.

Sir William Hingston, employing both languages, proclaimed that the world of medical science knew no geographical boundaries, no distinction of nationality, of race or of language. Dr. F. W. Campbell spoke in his own inimitable way of the older members of the profession whom he knew, whose names are now becoming a tradition to the younger generation. Dr. Lachapelle presided with his usual grace which has always meant so much to the profession in Montreal, as Dr. Adami was careful to remark in proposing his health.

The members of the profession never appeared to better advantage, and in the enthusiasm of the moment the gift of tongues descended in quarters totally unexpected. Prophecy is a dangerous exercise, yet we shall be much mistaken if this friendly meeting does not mark the beginning of a new era in Montreal, in which all will work together in complete unity, in the common cause against suffering and disease.

The financial statement for the eighty-second year of the Montreal General Hospital does not afford particularly pleasant reading. It shows a deficit of nearly twelve thousand dollars as a result of the year's operations, and the income was nearly ten thousand dollars less than last year. A diminishing income with increasing needs is not a satisfactory situation. The charitable public of Montreal may be trusted wholly, and if the needs of this great hospital are adequately presented we feel sure that there will be a prompt response. It should not be necessary to make the demonstration which was made in 1869, when a portion of the hospital was closed for lack of funds. We take the liberty of making this appeal, though we have not been asked to do so, nor have we been favoured with a copy of the statement in question.

The Protestant Hospital for the Insane at Verdun has been made the recipient of a most acceptable gift—a residence for the Superintendent, Dr. T. J. W. Burgess. The plans have been prepared by Mr. Robert Findlay, and construction will commence in the spring, so that the house will be ready for occupation next autumn. The new residence will stand upon the east side of the avenue, half way between the hospital and the Lachine road. The material to be employed will be sand-

stone and red brick and the cost will be in the neighbourhood of sixteen thousand dollars. The work will be done under the care of Mr. Lyall, the President. The donor of this handsome gift is Mr. G. B. Burland, an old friend of the institution.

Dr. Howard Kemp, who has been carrying on the work of treating incipient cases of tuberculosis at Ste. Agathe during the past five years, has proved by results the value of his methods and the suitability of the climate of the Laurentians. Dr. Kemp has now made his first appeal to the profession based upon those results, and offers to them the services of a well-equipped sanatorium of proven value near at hand and easy of access. This institution was begun in a small way; it has been enlarged to meet an increasing demand, and we feel sure that it will be developed still further, if Dr. Kemp receives the support to which he is entitled. There is no reason why the good work of Dr. Trudeau at Saranac should not be duplicated at Ste. Agathe.

By order of Justice Morrison, the names of Doctors Telford, Vancouver, and Veerhertbrugghen, Kamloops, will be replaced on the roll of licensed practitioners of British Columbia, after being expunged by the medical council for alleged unprofessional conduct. The decision practically limits the powers of the council, and makes the judgments of the council subject to appeal to the courts.

The next meeting of the American Anti-Tuberculosis League will be held in Atlanta, April 17th to 19th, 1905. Reduced rates will be given on all roads, and hotel rates will also be made special for visitors. Over 1,000 delegates, representing national and state medical societies, have already been enrolled.

We beg to announce the suspension of publication of the *Canada Medical Record*. Arrangements are in progress for its incorporation with this JOURNAL, and, in the meantime, Dr. F. W. Campbell, the late editor, has joined our staff of collaborators.

OSLERIANA.

AEQUANIMITAS With Other Addresses to Medical Students, Nurses and Practitioners of Medicine, by William Osler, M.D., F.R.S., London, H. K. Lewis, 136 Gower Street, W.C., Baltimore, Egerton Y. Davis, I West Franklin Street, 1904.

It was a happy thought of Osler—we are grateful to him for it—to rescue from the decent obscurity of medical journals his previous "Happy Thoughts" and give them to us in this well-printed, pleasing,

and, we would add, self-respecting and wholly worthy form. As a matter of instinctive propriety, writing in a medical journal we use the term "decent obscurity"; but that is altogether too polite—sepulchral oblivion more nearly expresses the truth. Your medical journal is a veritable graveyard for addresses on general topics. No matter how stirring the note sounded, no matter how perfect the expression of wisdom gained from peripetetic communion with many men and many books; no matter, in short, how nearly the general address approaches to being a masterpiece, in the medical journal its life is as the life of one of the Ephemeridae; it exists for a day, at most for a week, then it passes hence to be no more seen. Your paper on some moot point in medicine or surgery, or case report, your brief note on some out-of-the-way symptom or rare condition, or on anything however remotely connected with medicine—on the habits of pediculi, for example, or on hysterical vaginismus—that is not lost. It is indexed, and in the course of years it must be referred to again and again, if not by those of your own country surely by some studious German or French student working up his thesis; unless indeed you have labelled it, "An interesting observation," or have given it some other "fool name" that wholly cloaks its individuality. Your general address, dealing as it does, in general, with generalities, is buried; it cannot be indexed. Under what heading, indeed, could one seek for the first of these addresses, that which gives the title to the volume before us, save, happily, under "Osler, William."

"Aequanimitas" indeed we do not remember; it is new to us. It was before our day (we speak here individually and not editorially); but how many old friends we greet in this volume! "Teacher and Student" we read in 1892. The "Leaven of Science" we well remember, delivered as it was at the opening of the Wistar Institute in Philadelphia in 1894, with its tribute to that group of the Quaker City anatomists, Physick, Shippen, Caspar Wistar, Horner and Leidy, and its glowing appeal for men who should be thinkers as well as workers and for the higher life in the University; "The Army Surgeon," too, delivered at the Army Medical School in Washington in the same year, with its broad outlook over the scope and possibilities of the army surgeon's life. We remember wondering with a chuckle what the Lady Superintendent of Johns Hopkins Hospital thought of Osler's sturdy advice in his address on "Nurse and Patient," when he told the nursing graduates that marriage is the natural end of the trained nurse, and that so truly as a young man married is a young man marred, so a woman unmarried, in a certain sense, is a woman undone. And we remember the added request inserted to placate that Lady Superin-

tendent, that nurses should abstain from philandering during their period of working and, as much as in them lay, should spare their fellow-workers, the physicians and surgeons of the staff. Everyone knows—for were not abstracts published in all the daily papers at the time?—the address on "Medicine in the Nineteenth Century," given to the Johns Hopkins Historical Club in January, 1901. But best of all perhaps, most thoughtful and most brotherly, is that address upon "Internal Medicine as a Vocation," delivered at the New York Academy of Medicine in 1887; delivered, it is true, to the grey beards of the profession, but written essentially for the young practitioner entering upon his life's work.

Then there is the long series of addresses, delivered to us here in Canada, which have more immediately stirred and appealed to us. Let us run over them. There is first "Teaching and Thinking," delivered at the then new Medical Buildings of McGill in 1894. Many of our readers will recall the crowded lecture room with Lord Aberdeen in the Chair—a little uncertain, it seemed, as to who this Osler might be. Do you not remember the reference to the "cross-legged Juno who presided over the arrival of your grand-parents," where "now sits a benign and straight-legged goddess"? Or the thrust at the clerical love of quack medicines:—"I find that the further away they have wandered from the decrees of the Council of Trent, the more apt are they to be steeped in thaumaturgic and Galenical superstition," or "The desire to take medicine is one feature which distinguishes man, the animal, from his fellow-creatures," and its concluding dream that Montreal may become the Edinburgh of America, "a great medical centre to which men will flock for sound learning, whose laboratories will attract the ablest students, and whose teaching will go out into all lands." Have we more nearly approached to that ideal, we wonder, in the last ten years? There still remains to foster ever more "that undefinable something which for want of a better term we call the university spirit, a something which the rich institution may not have and with which a poor one may be saturated. . . . which comes insensibly, with a loyal devotion to duty and to high ideals, and without which *Nehushtan* is written on the portals of any school of medicine, however famous." Then there is that brave address, and memorable, before the British Medical Association in 1897. That too is here, with its eulogy of British Medicine, its reference to the three portraits above the fireplace in Sir Henry Acland's library, and its masterly *Uebersicht* over the development of medicine, not merely in Great Britain, but in the British Empire and wherever the British tongue is spoken. Here, too, is the address we published but a few years since when Osler came

back to us to recall the days when twenty-five years ago he first rose to the professoriate in Montreal. We dare not dip into it, nor into that other Montreal address upon "Chauvinism" given to the Canadian Medical Association in 1902. Last, and not among the least, is that other reminiscent and exhortatory "Master Word in Medicine," spoken at the opening of the new buildings of the Medical School of Toronto in 1903.

Laden with golden grain from which, mindful of our humanity, care has been taken not to remove all the chaff, it is, in short, a notable, friendly and cheering company of good words and high ideals that Osler brings before us; a book that should be near at hand in the library of every practitioner on this continent; a book delightful to dip into here and there, if only to wonder how one small head should carry all he knows—in the matter of quotations,* not to mention Medicine and Pathology, and certainly not to mention treatment by drugs!

Reviews and Notices of Books.

A Practical Manual of Diseases of Woman and Uterine Therapeutics for Students and Practitioners. By H. Macnaughton-Jones, M.D., M.Ch., Master of Obstetrics (Honoris Causa), Royal University of Ireland, formerly Professor of Midwifery and Diseases of Women and Children in the Queen's University, etc., etc. Ninth Edition. London: Baillière, Tindall & Cox, 1904. Canadian agents: Chandler & Massey, Toronto; Carveth & Co., Toronto.

Though this is the ninth edition of an English treatise on gynæcology, we believe it to be comparatively little known on this side of the Atlantic. The author calls it a book for students and practitioners, but its voluminous character—over one thousand pages—and almost encyclopædic compass of the subject render it, we believe, quite unsuitable for the student. However, the fact that it has already reached a ninth edition since 1884 must be held to prove its popularity with the English profession. The distinguished author made his reputation in Dublin, but now lives in London, where he has practised for several years. Whilst embodying his own ripe experience, opinions and

* We have made a rough calculation that there are 650 examples of the *quotatio recta* in the less than 400 small octavo pages of good sized type; while as for the examples of the *quotatio obliqua*—the "tags" and reminiscences of browsings among well-loved books, the words and phrases that in a flash bring to mind the inspirations of great men, and what our fathers in literature have declared unto us—their name is legion; they are not to be counted.

methods, the author has not failed to include the experience and opinions of others, and always with full and generous acknowledgment. After a full consideration of the anatomy and physiology of the organs and parts concerned, the author discusses certain important clinical matters. Then come case taking and examination of patients, to be followed by operating room equipment and technique. The various operations of gynæcology are all minutely described and copiously illustrated, so are all the instruments and appliances of all distinguished operators and inventors of instruments. So numerous are these that a complete catalogue of all gynæcological instruments, with illustrations, may be said to be contained in the book. Many of these the expert operator will consider unnecessary or useless. The author himself, in referring to some of them in a foot-note, rather aptly uses the word "toys."

The illustrations of every department of the work are copious, complete and most valuable. Many are original, but many are copied from the works of other authors, ample credit always being given to the source, text-book, treatise, monograph or journal article. There are 637 ordinary illustrations in the text and 122 plates, a few beautifully coloured. While the surgery of gynæcology is most fully treated, no department has been omitted. The medical aspects of gynæcological therapeutics are much more fully discussed than in most books, and a chapter on electro therapeutics has been appended. A fairly complete examination of the work leads to the conclusion that the author's views are sound and based on large experience and careful observation, and that his book is the most complete recent treatise on gynæcology in the English language.

A Text-Book of Legal Medicine. By Frank Winthrop Draper, A.M., M.D., Professor of Legal Medicine in Harvard University; Medical Examiner for the County of Suffolk, Massachusetts. Octavo volume of 573 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1905. Cloth, $4.00 net. Canadian agents: J. A. Carveth & Co., 434 Yonge Street, Toronto.

Designed alike for the medical student and the practitioner, Dr. Draper's book seems to be an excellent one, for it departs from a recital of the stock cases that have appeared in book after book for generations, or at least deals with them only by passing reference; and there is a strong flavour of individuality about the whole book that can be present only when the writer has a large personal experience from which to draw. The chapters with reference to evidence, the giving of evidence, and the preparation of cases in which evidence is to be given are very

practical; the author properly insists at some length upon the modes of observation, and the necessity for the closest noting of all circumstances connected with a medico legal case. It is true that all the citations of the law are from the Massachusetts statutes, which, the author states, he regards as "the most progressive and most intelligent expression of modern jurisprudence."

To test a book of legal medicine, one naturally turns to such a subject as the serum test for human blood. Dr. Draper maintains a neutral position with regard to its usefulness, and refuses to accord it, as yet, the value it may possibly have hereafter, observing very properly that in a case where a man's guilt lies upon such evidence, the evidence must admit no doubt.

It might be said by way of criticism that several plates illustrating wounds are not of very great value, though it might be admitted that wounds are notoriously unsuitable for definite illustration.

Especially useful are many paragraphs dealing with the relation of patient and physician, privileged communications, malpractice and death certificates; the practitioner will find much clear statement that will tell him precisely what he wants. Altogether, Dr. Draper's book deserves to attain a good place among text-books of legal medicine.

THE DISEASES OF SOCIETY AND DEGENERACY. By G. FRANK LYDSTON, M.D., Professor of Genito-Urinary Surgery, University of Illinois. J. B. Lippincott Company, Philadelphia and London, 1904.

This is a book upon a sad subject, and the author displays no high degree of wisdom in dealing with the deeper aspects of it. As diseases of society are closely bound up with morality, they are usually treated according to the standard of morality which prevails in the community where they exist. The standard which Dr. Lydston adopts is the Chicago standard, and it differs in some respects from that which prevails in the Province of Quebec. The ideas expressed in the section upon matrimony are, we think, subversive of good order. There is also a lack of reticence, which is not in good taste. The book is largely an expression of belief, and we take leave to dissent from much of what is said upon questions of private and public morality. The writing, as a whole, is wild and incoherent. There is also much misstatement, of which one example will suffice:—"Cromwell was a sickly neuropath, who was a confirmed hypochondriac, his morbidity often approaching melancholia. All his life he was dominated by a vision, in which a spectral woman of gigantic stature foretold his coming greatness—a phantasmic reflection of his own hypertrophic ego." This comes peculiarly near being nonsense.

THE INFLUENCE OF GROWTH IN CONGENITAL AND ACQUIRED DEFORMITIES. By ADONIRAM BROWN JUDSON, A.M., M.A., formerly Orthopædic Surgeon to the Out-Patient Department, New York Hospital. Illustrated. William Wood & Company, 1905.

The author of this book adopts a new point of view. In ten chapters he takes a survey of orthopædic surgery, and demonstrates the importance of growth as a factor in the treatment of deformities. The main idea is that the patient should be so equipped that natural growth may be permitted to assist in recovery. This principle is entirely sound, and the author illustrates it by the results which may be obtained in such conditions as congenital club-foot, infantile paralysis and tuberculous disease of the various joints. A plea is made for early treatment by exercise and by appliances, all of which are well figured and described. The recital of cases gives a sense of reality to the work, and the results are encouraging to those who are engaged upon this special and humane part of surgery. There is much pretty sentiment in the book, which the present reviewer fails to comprehend adequately. Of such is the following:—"The combination in their young lives of childish and heroic qualities suggests a fantasy in which birds and wild flowers act a tragedy and improve the precepts of stoic philosophy."

THE DIAGNOSIS AND MODERN TREATMENT OF PULMONARY CONSUMPTION with special reference to the Early Recognition and the Permanent Arrest of the Disease. By ARTHUR LATHAM, M.A., M.D. Oxon., M.A., Cantab, F.R.C.P., Lond. Second Edition. 224 pages, 5 shillings net. London: Baillière, Tindall & Cox. Toronto: J. A. Carveth; Chandler & Massey. 1905.

This comprehensive title indicates the scope of the work under consideration, and the name of the author is guarantee that it is well done. Dr. Latham's teaching is specific and minute, and the book is a compendium of the best which is known of the treatment of consumption. It should be owned by every physician who is called upon to deal with this disease, and if patients are bound to have a book, they could not have a better one. The treatment, public and private, indoors and out of doors, appears to us to be correct and the tone of the book is hopeful.

INTERNATIONAL CLINICS. Edited by A. O. J. KELLY, M.D. Volume IV. Fourteenth Series, 1905. J. B. Lippincott Company, Philadelphia; Charles Roberts, Montreal.

This volume contains a coloured plate showing the mode of reproduction of the *Entamœba dysenteriæ*, fifty plates and thirteen figures. The contributors to "Treatment" are George Hayem, Adolphe Javal, Myron Metzenbaum and F. Lejars. The contributors to "Medicine" are

J. H. Watson, Solomon Solis Cohen, Sir Dyce Duckworth, H. Senator Alexander Crombie and Robert Dawson Rudolf. The contributors to "Surgery" are E. H. Bradford, Wisner R. Townsend, John Lincoln Porter, James K. Young, W. Arbuthnot Lane, Anthony A. Bowlby and Ernest Gallant. Neurology is dealt with in an important article by Daniel R. Brower; and Pathology by Alexander Scott Warthin and Charles F. Craig. We note an article by Dr. Lockhart on Post-Climacteric Hæmorrhages. The volume is admirable in choice of subjects and arrangement.

Bacteriology and Surgical Technic for Nurses. By Emily M. A. Stoney, Superintendent of the Training School for Nurses, St Anthony's Hospital, Rock Island, Ill. Second Edition, thoroughly revised and much enlarged by Frederick R. Griffith, M.D., Surgeon, Fellow of the New York Academy of Medicine. 12mo volume of 278 pages, fully illustrated. Philadelphia, New York, London; W. B. Saunders & Company, 1905. Canadian agents: J. A. Carveth & Company, Toronto. Cloth, $1.50.

This is the second edition of a book which we had occasion to mention with commendation at the time of its previous appearance.

The Doctors' Recreation Series. A Book about Doctors. By John Cordy Jeaffreson. The Saalfield Publishing Company, Akron. New York and Chicago, 1904 .

This is the fourth volume of this unique series, and is, as its name implies, a book about doctors, their habits and peculiarities. The book is a mine of quaint knowledge and amusing incident. It may be opened at any page and read with interest for so long as time will allow.

Transactions of the American Surgical Association. Volume XXII. Edited by Richard H. Harte, M.D. William J. Dornan, Philadelphia.

Essays in Puritanism. By Andrew Macphail, M.D. T. Fisher Unwin, London, 1905. 257 pages; six shillings. Houghton, Mifflin and Company, Boston, March, 1905. 340 pages; $1.50.

Annual Report of the Surgeon-General of the United States, 1904.

During January last 449 patients were treated at the Hotel Dieu. Admitted 138 men and 130 women; discharged 121 men and 97 women; died during the month, 12 men and 5 women.

Medical News.

MONTREAL GENERAL HOSPITAL.

The eighty-second annual meeting of the Montreal General Hospital was held on the 21st February, 1905.

The total number of patients who have been passed through the wards of the hospital during 1904 were 3,144, against 3,066 in 1903.

The outdoor patients were, in 1904, 38,922, against 35,984 in 1903, showing an increase during the year of 2,938.

During the past year 19 nurses graduated and received their diplomas and medals, making a total of 233 since the establishment of the school.

The report of the secretary gave the general statement: Ordinary income, $83,589.41; ordinary expenditure, $95,508.88; excess of expenditure, $11,919.47. Legacies amounting to $19,590 had been received from various estates and the sum of $25,000 had been added to the endowment fund during the year.

The secretary's report gave in detail the record of the hospital work. The total number of indoor patients treated to a conclusion were 3,144, an increase of 78 over the previous year. Of this number 3,156 were admitted during the year and 201 remained at the end of the year. Those discharged numbered 2,893, and there were 251 deaths. The percentage of mortality was 7.98, or 4.9 exclusive of deaths occurring within three days of admission. The average number per day in the ward was 189.1. The average number of days spent in the ward by each patient was 22.05, and the aggregate number of days in the hospital of all patients was 69,213, an increase of 1,775 over the previous year. The average cost per patient daily was $1.38, as against $1.56 last year.

Of indoor patients treated to a conclusion there were 1,973 males and 1,171 females, making a total of 3,144. The religious denominations were represented as follows:—Protestants, 1,549; Roman Catholics, 1,412; others, 183. There were 2,618 citizens of Montreal, 435 strangers, 77 sailors, and 14 immigrants. The Canadians numbered 1,835, British Islands, 767, Americans, 186, and 100 Italians.

In the outdoor department 38,922 consultations were held, and the ambulance had been called out 1,511 times. Two hundred and forty-five autopsies were performed and 1,374 examinations were made for the attending staff.

The medical staff was re-elected for another year.

ROYAL VICTORIA HOSPITAL.

The following is the report for month of January:—Patients admitted, 256; discharged, 211; died, 13; ambulance calls, 62. Outdoor

Department—Medical, 523; surgical, 307; ophthalmological, 291; gynæcological, 83; laryngological, 398—total, 1,602.

The new wing of the Woodstock hospital was formally opened on the 13th February. The new wing includes an operating room, a department given up entirely to private wards, a recovery ward and accommodations for the nursing staff.

The Berlin Röntgen Society (Röntgen Vereinigung zu Berlin) has arranged for a congress in commemoration of the first decennial of Röntgen's discovery to be held April 30th to May 3rd, 1905. The secretary is Herr Dr. Immelmann, Berlin W., Lützowstrasse 72.

The Sherbrooke hospital has received a donation of a thousand dollars from the retiring president, Major Wood. There were admitted to the hospital during the year 282 patients. There were seventeen deaths. Of the patients 111 were residents of Sherbrooke and 171 came from other places.

Dr. R. M. Riddell, of Winnipeg, died on the 29th of January of typhoid fever. He was a graduate of Manitoba Medical College.

Retrospect of Current Literature.

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

CHARLES L. SCUDDER, M.D. "An Operation For Inguinal Hernia." *Annals of Surgery*, January, 1905.

This article contains the writer's interpretation of the essential details of Bassini's operation, and is illustrated by nine drawings made from studies of the anatomical findings at such operations. He sees no reason to excise the veins of the cord, and though the cord has been usually transplanted he considers it of comparatively little importance and is more and more inclined not to transplant it. When the sac extends into the scrotum—in acquired cases—it is first separated from the cord at the proximal end and then divided transversely, and the proximal end alone is dealt with, unless the sac is thick and extensive when the distal part is excised. He has never seen a hydrocele or cyst follow this method of treating the undissected distal portion. The two advantages would seem to be the lessened disturbance to the cord and shortening the time of operation. The neck of the sac is thor-

oughly freed from surrounding structures, pulled well down, and closed by a continuous suture of chromic gut. Other points regarded as important are an ample cutaneous incision; absolute hæmostasis at time of operation, and subsequently a hand splint is applied for 24 hours to prevent flexion of the knee since, when the thigh is flexed, a splica exerts no pressure over the groin; an anatomical dissection of the parts concerned so that every structure is clearly recognized; the complete emptying of the sac of both adherent and non-adherent contents; the suturing of the hernial sac at the level of the peritoneum of the anterior abdominal wall; the exact suturing of the abdominal wall superficial to the peritoneal sutures including always one or two sutures placed over and above the sutured sac; and the minimum of trauma to the cord. The patient thus operated upon is kept in bed for two weeks, on a bed-rest the third week, up the fourth, and a spica bandage worn for a month subsequently.

James G. Mumford, M.D. "Gastro-Enterostomy." *Boston Medical and Surgical Journal*, January 26, 1905.

The object of this preliminary communication is to urge an operation which the author has practised of late, an operation elaborated out of the well-known procedure of Chaput. The latter's operation consisted of posterior gastro-enterostomy with the long loop, with entero-enterostomy and section of the afferent loop between the two anastomoses. The disadvantages of this operation are that a vicious circle may follow, the pylorus may resume its functions, the new gastric stoma may close. The writer advocates the further step of section of the pylorus. It adds nothing to the risks, vicious circle is impossible, and the duodenum, now side-tracked, becomes a mere continuation of the common bile duct.

S. Edward Sanderson, M. D. "Acute Post-Operative Thyroidism." *American Medicine*, February 4, 1905.

This interesting article consists of the report of such a condition occurring in a young woman of 20, operated upon for chronic appendicitis, and cites five other cases from literature in which the condition developed after operation. His conclusions are that acute post operative thyroidism is rare, all cases cited proved fatal save his own and one other, the use of cactus grandifloris, never before recommended in this or similar cases, seemed to be of great aid in bringing about a favourable termination, the peculiar pigmentation following the turgescence and being different on the two halves of the body is of interest,

and such a complication should make the surgeon ever on his guard to recognize the presence of a condition, which, if lighted up, will produce acute thyroidism.

Hofrath Professor von Mosetig Moorhof and B. Seymour Jones, F.R.C.S., Eng. "Experiences With Iodoform Bone Plugging." *Lancet*, January 21, 1905.

So far as we know this is the first time that a description of Professor Moorhof's bone plugging procedure has appeared in English, and the article is warmly recommended to the readers of the Journal for perusal as a mere synopsis would not do justice to its excellence. Professor Moorhof has used his method in more than 220 cases without a single failure, has never noticed any ill-effects, such as intolerance of the plugging and subsequent necessity for its removal, nor symptoms of iodism, although in one case more than 200 grammes were used. Dr. Armstrong has used this method in four cases, one on osteomyelitis of the sternum, and an incision of the ankle joint, and a case of osteomyelitis of the tibia. All these cases up to the present time of reporting are progressing most favourably. W. L. B.

Dr. Paul Klemm. "Contribution to the Question of Skin-Sterilization." *Dent. Zeit. f. Chir.*, Dec., 1904.

In a rather long article, Klemm gives us much common-sense but little that is new. It has been too much the custom, he says, in testing the results of any given method of skin disinfection, to scrape or cut the skin with sharp instruments, or pull a strand of silk violently to and fro under the nail, and inoculate the material thus obtained upon media. All this is not natural, and he adopts instead the original method of Kümmell, that of pressing the fingers into agar or other solid culture media. In this way the mode of infection from the hands during operating is most closely imitated. Klemm's experiments, carried out in this way, concern mainly details in the ordinarily accepted routine of hand disinfection. Some of his conclusions are as follows:—Bacteria are never found in the sweat-gland ducts, and very rarely in the sebaceous-gland ducts; normally they infest the spaces between the upper layers of the epidermis, yet they lie so deeply that no method yet known of disinfection produces an absolute skin sterility, but only a relative one. Sublimate never penetrates deeper than the second cell layer of the epidermis. This he proved by microscopical sections. As for alcohol, its bactericidal power is hardly worth considering; a thin layer of *staphylococcus aureus* upon a cover-slip was exposed to 70 per cent. alcohol for various periods, and the bacteria were found not to be

killed under 12 minutes as a minimum. The value of alcohol is, nevertheless, a very real one, but consists chiefly in its contracting and caking influence upon the skin, thus covering over the bacteria which remain. This effect he found to last for a good three-quarters of an hour if the hands remained dry. If hands, during operation, must be kept wet—with blood or solutions—he advises frequent renewal of washing in alcohol. Klemm examined the silk sutures that were removed from *clean* wounds, and found them practically always infected with bacteria; on the other hand, he could prove that, when first left in the wound, they were free of bacteria. No doubt inhibition plus the normal presence of *staphylococcus albus!*

As to technique, he believes strongly in removing fats with sulphuric ether after the usual washing with alkaline soap; then follows sublimate, and finally alcohol 70 per cent.

After all this comes the italicized conclusion, that "implantation-infection (that is, from material necessarily left in the wound, catgut, silk, etc.) through normal skin bacteria is the one weak point in wound treatment, inasmuch as we possess at the present time no means whereby an absolute sterility of the operation field can be obtained.

MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY, H. A. LAFLEUR AND W. F. HAMILTON.

PIERY and NICOLAS. "Valeur Pronostique du Syndrome Urinaire de la Pleurésie Tuberculeuse. *Arch. Gen de Méd.*, Dec. 20, 1904.

Recent researches have established two facts regarding urinary elimination in tuberculous pleurisy—(1) At the period of absorption of the exudate there is a crisis of polyuria with hyperchloruria; (2) this crisis is constantly accompanied by albuminuria.

The authors show that these urinary changes occur only in benign cases of tubercular pleurisy. The grave forms have a urinary formula of their own, which can be utilized in the study and prognosis of such cases.

Fifteen cases were carefully observed regarding the total urinary excretion, the quantities of chlorides and the albumin and urea excreted. The tubercular character of the disease was established by cytological examination, by inoculations and by sero-diagnosis.

The cases were classified in three groups—(a) grave cases terminating fatally, (b) a middle class marked by a prolonged course, (c) benign cases of short duration, leaving but slight adhesions.

Four cases fell in the first group. One died from miliary tuber-

culosis, the second from asphyxia, resulting from pleurisy of the opposite side, the third from pulmonary and probably peritoneal tuberculosis, and the fourth from syncope. In these cases the urine was uniformly diminished during the period of increase of the exudate. The chlorides were diminished or normal (in one case).

In the ultimate stage the urinary curves presented a uniform character. The charts, which all along showed a diminished excretion of urine and chlorides, presented a uniform and progressive fall at the approach of death. There was a uniform and strictly parallel diminution of the four elements—diuresis, chlorides, urea and solids. The only exception was in the case of cardiac collapse, where these signs only appeared the day before death. Albuminuria was present in all except the last case.

In the second group, or those of moderate severity, including five cases, the following variations occurred during the periods of increase, arrest, and diminution of the exudate.

Period of Increase.—The urine was no longer constantly diminished. Diminution in amount was noticed twice; once it was normal, and once it increased progressively from one to three litres. The chlorides and urea were either increased or diminished, and albumin was present in three of five cases.

Stationary Period.—The urine increased in all the cases, in comparison with the preceding period, amounting to a true polyuria in three cases. Albumin existed in two cases, and chlorides corresponded with the urinary excretion. Urea and solids were normal or increased.

Period of Resolution.—At this stage the urinary formula of polyuria, hyperchloruria and albuminuria was constant, but was not so marked as in benign cases. The polyuria was slight and transitory in two cases; hyperchloruria was constant; the elimination of urea and solids was normal or increased; albumin was present in four or five instances.

In the third group, that of benign cases, six in number, the following changes were noted.

Period of Increase.—At this stage a diminished amount of urine was present in two cases, and normal in a third. Hyperchloruria was present in one and normal in two. Urea and solids were normal or slightly diminished, and albumin existed in a third of the cases.

Period of Arrest.—At this stage the urine was normal or increased, whilst hyperchloruria was constant. Albumin was present only in one of four cases.

Period of Resolution.—At this point the urinary crisis was well marked. The urine and hyperchloruria showed a rapid or progressive increase, and albumin was almost constant. Urea and solids were

normal or diminished. The second and third groups of cases thus correspond closely at this period, but in the latter the hyperchloruria is more pronounced.

In studying the urinary curves in all three classes of cases in the three stages of the disease, the urinary formula presented certain general characters.

During the period of increase the urine showed a decrease, but most constant in the grave cases. In the two severer types of the malady the chlorides were increased. Hyperchloruria in benign cases, on the other hand, presented a normal excretion of chlorides in two-thirds and an increase in the other third.

The elimination of urea and solids was diminished or normal, and the variations bore no relation to the gravity of the case. Albuminuria present in 60% of all cases, was constant in grave cases, was present in 66.6% of the middle class, and only found in 33.3% of benign cases.

In the period of arrest the grave cases are excluded, as this stage is absent or not apparent. In the two milder types the urine was relatively or absolutely (polyuria) increased. Hyperchloruria was present in both classes, but was more constant in the severe cases. Albuminuria was notably diminished in frequency, amounting to 40% in the middle class and 25% in the benign forms.

In the period of resolution the differences between the three groups were most pronounced. Here the oliguria of the grave cases contrasts with the polyuria of the other groups. The urea, solids and chlorides show a graphic and corresponding fall in the grave cases, a more or less rapid rise in the others. Albuminuria was most frequent in the grave, and least frequent in the benign types, and in the latter it appeared especially during the period of resolution.

The albuminuria of pleurisy is essentially intermittent and small in quantity, and usually ceases rapidly as convalescence is established.

Albuminuria occurred, as already stated, most frequently in the grave cases, when it was constant, excluding the case of cardiac collapse. In the middle and benign forms it was present in 66.6% and 33.3% respectively.

The effect of paracentesis was noted in seven cases. The results always showed an increase in urine and chlorides, and once of urea and solids as well.

The influence of the injection of salt was tried in seven cases. The exudate increased in three, was unaffected in three and in one the result was doubtful. In half the cases therefore an increase in the exudation was produced. The urine showed an increase in all cases, and a gain in weight of the patients was also constant.

Certain points bearing on the prognosis of tuberculous pleurisies (and these include almost all cases of acute pleurisy) can be deduced from the results of urinary examinations.

During the period of increase an increase in quantity, with normal or slightly diminished chlorides, indicate a curable pleurisy, whilst oliguria with hyperchloruria suggest a grave form.

During the second period of the disease, that of arrest, an increase of the urine and chlorides indicate a favourable issue, whilst a decrease indicates a fatal termination.

A milk diet is recommended as most likely to provoke diuresis and hyperchloruria. The application of blisters derives some support from the fact that diuresis was induced by their application, whilst thoracentesis has a similar effect, and tends to prevent extensive adhesions.

W. S. THAYER, M.D. "Analysis of Forty-Two cases of Venous Thrombosis occurring in the Course of Typhoid Fever." *Trans. Am. Phys. XIX.*

Out of 1,463 cases of typhoid treated at the Johns Hopkins Hospital there were 39 instances of venous thrombosis, or 2.6 per cent. In five of the 39 cases there was a fatal result, and in two instances embolism was the direct cause of death.

The seat of the thrombus was in the lower extremities in 40 cases, in one in the upper and one in the pulmonary artery. The left side was affected in 26 cases, the right in five and both in nine. The femoral vein was involved in 21 instances; the popliteal and iliac and calf veins five each; the internal saphenous, three, and the axillary, pulmonary artery, and common iliac and pulmonary artery together in one each.

The third and fourth weeks are the periods at which thrombosis is most frequent, but it may occur in the first and second, or as late as the thirteenth week.

In most instances thrombosis occurs during the fever, but in a third of the cases the temperature was normal at the time of onset. Chills occur before or about the period of onset in 28 per cent.

Pain is the first definite symptom of onset, its site being in the region of the affected vein. In one instance of iliac thrombosis the pain and abdominal pain was so severe that perforation was suspected and laparatomy performed. Œdema was always present, the temperature was raised and there was often redness over the affected vessels.

The leucocyte count was over 10,000 in more than half the cases, and in the case of iliac thrombosis, in which laparotomy was performed, it amounted to 24,864.

Cultures were only recorded in two cases, one showing a pure culture of typhoid bacillus.

More or less permanent disability resulted in ten cases which were followed up. Œdema and persistent enlargement of the affected leg was constantly present, sometimes pain or cramps, and once weakness of the limb when it was used too much. Varices were marked, frequently resulting in ulceration, and in thrombosis of the femoral vein a greater or less quantity of blood is carried up the iliac vein of the opposite side, the current crossing the abdomen through anastomoses in the hypogastrium, resulting in a characteristic triangular area of varicose veins.

CHARLES G. STOCKTON, M.D. "Abdominal Pain from Unsuspected Irritation at the Internal Inguinal Ring." *Trans. Am. Phys. XIX.*

Stockton calls attention to a form of abdominal pain which has been mistaken for chronic appendicitis, nephro-lithiasis and questionable affections of the colon. The condition occurs in adult males, usually of relatively active life. The pain is chiefly confined to the lower quadrants of the abdomen, but occasionally appears in the upper quadrants as well. In some instances the pain is colicky in character, in others continuous, and sometimes burning, suggesting irritation of the peritoneum. There is rarely localized tenderness, although it occasionally occurs. The symptoms are usually relieved in the recumbent posture, and exercise or straining efforts commonly cause aggravation. The symptoms may be persistent or intermittent, and, like other abdominal affections often give rise to much apprehension on the part of the patient.

The anatomical basis depends on an overpatulous condition of the internal ring, so that a slight bulging is detected on any straining effort. The symptoms may occur even when the inguinal canal is of normal size. Relief is at once obtained by the application of a carefully adjusted truss. A synopsis of twelve cases is presented.

Society Proceedings.

SOCIETE MEDICALE DE MONTREAL.

Meeting of January 24, 1905.

DR. O. F. MERCIER, PRESIDENT, IN THE CHAIR.

The PRESIDENT announced that Dr. L. P. Normand, of Three Rivers, had accepted the invitation to attend the Society's second meeting in February, and deliver a lecture.

The banquet of the medical profession was strongly brought before the meeting, and the members were asked to strongly endeavour to make it a success.

Drs. Dubé and Boulet, delegates to the Buckingham meeting of the Medical Association of the County of Labelle, reported a large attendance, practitioners coming from over 100 miles to assist.

Dr. Robitaille, President of the Medical Society of the County of Labelle and Dr. D'Amour, its Secretary, proved to be able delegates in discussing scientific questions and affable hosts. They reported that Dr. Paquet, of Hull, had read a very interesting paper on tuberculosis, the question being treated from a hygienic point of view.

Dr. Aubry, also from Hull, read a paper on the management of purulent pleurisy, which convinced his hearers that he had reaped something from his own personal observation and experience. Mr. Henri Bourassa delivered an address on the Roddick Bill, providing for interprovincial reciprocity throughout the Dominion. Dr. Hervieux reported a case of Monstrosity sent by Dr. Biron of l'Assomption. A paper on "Hygiene in Churches," by Dr. A. Naveau, of St. Joseph de la Beauce, was read by the Secretary, and the meeting adjourned.

Meeting of February 7, 1905.

Dr. O. F. Mercier, President, in the Chair.

Drs Harwood and Ethier reported on two cases of Cæsarian Section, and the patients were brought before the members.

Dr. Mercier reported two interesting cases of strangulated hernia.

Dr. J. N. Roy reported a case of Polypus of the Larynx—ablation with Wals forceps.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The eighth regular meeting of the Society was held Friday, January the 20th, Dr. J. A. Macdonald in the chair.

F. G. Finley, M.D.—A case of Polyarthritis in a child.—Still's Disease. This affection usually comes on early in life before the second dentition, and, apart from this, there is no special cause recognized. The disease commonly begins by swelling in the knees and by stiffness in the cervical spines. The joints are very considerably swollen, fusiform in shape, and there is often a great deal of effusion. The ankles, elbows, wrists and the small joints of the fingers are affected. These never present any bony enlargement, and the cartilage is not eroded, so it differs from rheumatoid arthritis, which is occasionally seen even in children. The glands and the spleen show a certain amount of enlargement, and the glands affected are said to be somewhat related to the joints affected. There are occasionally exacerbations of the dis-

ease, in which there is a certain amount of fever with increased enlargement of the glands and the spleen. There is very little pain, and little or no tenderness. Later on, there may be flexion, and the child may be bed-ridden.

The case I have to record is that of a boy, 11 years of age. He had scarlatina, followed by nephritis, at five years of age. When convalescing he fell from a gallery and hurt his wrist and shoulder. About this time the mother noticed swelling of the joints, especially the wrists, hands, ankles and knees. On May 15th last, he complained of pain in the right knee-joint, and next day it was much swollen, red and hot. He remained in bed two weeks, and the joint returned to its usual size. In October, rapid swelling of the knees came on, the left two weeks after the right, yet, on handling them, there is practically no tenderness, and the boy has complained all through of very little pain. Slight fever has been present since admission. There is no deformity in the bony parts, as shown by the diagram. The lymphatic glands almost all over the body show slight enlargement, some the size of an almond. The spleen is palpable on deep inspiration. The boy shows a slight degree of anæmia, and Dr. Gordon found the red cells 5,000,000 and hæmoglobin a little over 60 per cent. The eosinophiles showed a marked increase at the expense of the polymorphonuclear cells as follows:—Eosinophiles, 16; large mononuclears, 15; lymphocytes, 29; transitional, 3; polymorphonuclear, 37 to 100.

This condition has been looked upon as an infection, and in favour of this it has been urged that the lymph glands and spleen are enlarged, but no definite bacteria have been described. Dr. Gillies examined some fluid from the joints, and found a Gram-positive diplococcus in the smear preparations, but no growth in cultures. This disease has often been described as rheumatoid arthritis in childhood, but it differs from that, in that there is little pain or tenderness about the joints, and there is only a very slight deformity of the fingers and no osteal outgrowths. The enlargement of the lymph glands and of the spleen gives the disease its distinctive character.

Dr. W. F. Hamilton.—In the medical wards of the Royal Victoria Hospital we have had two cases of children of six and eleven years showing multiple arthritis of rather a chronic type. If I remember aright, these cases were reported in the Journal by Dr. Nicholls. No observations were made upon the lymphatic glands at the time, and there was no mention of splenic enlargement. It would appear that the interpretation of these enlargements affords strong support to the view that the infectious nature of rheumatism and multiple arthritis is associated with micro-organisms in the blood.

Dr. Finley.—There certainly is a form of polyarthritis in childhood in which there is no enlargement of the lymph glands or spleen, apparently a progressive disease, and accompanied by more or less anchylosis.

Dr. Lapthorn Smith reported three cases of repair of injuries to the ureter. He said:—There are three principal ways in which the ureter may be injured so as to give rise to a urinary fistula. First, by being compressed between the child's head and the pelvic wall during prolonged labour with impaction of the head; second, by being caught between the blades of the clamp during vaginal hysterectomy for cancer, and third, by being accidentally cut during the removal of a large abdominal tumour, especially when the latter occupies one of the broad ligaments, in which case the ureter is displaced far from its proper anatomical relations. The proportion of frequency of these three ways, as shown by a paper by Fergman, who collected sixty-eight reported cases, was as follows:—Parturition, twenty-five cases; vaginal hysterectomy, twelve cases; abdominal section, three cases. I now beg to report three cases of repair of injury due to prolonged labour to the ureter, caused in each of these ways respectively. The first one, read before the Winnipeg meeting of the Canada Medical Association, August, 1901, has already been reported in the Philadelphia Medical Journal, October 5, 1901, but the other two cases are now reported for the first time.

Case I. — Mrs. J. B., 34 years of age, married, came to me at the Montreal Dispensary on July 1, 1901, giving the following history:—She began to menstruate at 14, was always regular, and the flow was painless. She was married at 31, and had one child at 32 whilst living at Vancouver, B.C. I afterwards learned from her doctor that he had been called to see a woman fourteen miles in the country without knowing what it was for, and on arriving there he found the head impacted in the pelvis. He drove back to town for his forceps, and returned next day and delivered her with great difficulty. A few days later large pieces of sloughing mucous membrane came away from the vagina, and it was noticed that she had incontinence of urine. It soon became evident that the vagina and ureter had been destroyed to some extent by the prolonged pressure. In Fergman's cases, of the twenty-five following parturition, sixteen were due to using the forceps too soon, and nine to using them too late. After remaining in this pitiable condition of always being wet from dribbling urine for two years and seven months, her friends made up a collection to send her to England to try to have the injury repaired. About a year and a half before coming to me she went to London, and spent three months in one of the best hospitals, during which time three plastic operations were performed without success. She then became discouraged, and insisted upon returning to Vancouver, and had made up her mind to bear her misery

as best she could. While passing through Montreal on the way back a friend induced her to come to the Montreal Dispensary. I found the vulva ulcerated and the thighs excoriated, and I could see the urine trickling from a small opening in the right vaginal fornix. I sent her into the Western Hospital, and after a long and absolutely accurate investigation of the condition, with which I will not weary you, I did a plastic operation, which failed, because the stitches cut out of the scar tissue, which had replaced a large extent of the mucous membrane in that locality. I tried once more by passing a silk-worm-gut purse-string suture far above the mouth of the fistula, hoping to reach healthy tissue. But this also failed. Then I obtained her consent to try implantation of the ureter. This consists in opening the abdomen, finding the ureter, cutting it off above the injury, and implanting it into an opening made in the highest or nearest point in the bladder. As Howard Kelly lost one case by septic infection from the urine, my patient was carefully prepared by giving her seven and a half grains of urotropin three times a day for a week beforehand to render the urine aseptic. Van Hook's method was employed, except that I did not follow his example of introducing the main traction sutures right into the cavity of the ureter and bladder, because I feared the formation of a calculus by deposition on the silk. I went through the muscular layer only of the ureter and bladder. These main stitches were reinforced by many chromicized catgut ones, stitching the mucous membrane of the ureter to the mucous membrane of the bladder, and the muscle of the ureter to the muscle of the bladder. I was able to do nearly the whole operation without opening the peritoneal cavity, but owing to some unforeseen difficulties, I was obliged to open it for a few minutes. A drainage tube was introduced to the site of the implantation in case it should leak, and a glass catheter *à demeure* was left in the bladder for a week. There was not a drop of leakage, and she made a good recovery, and went home and has remained so ever since.

The second case, a Mrs. H., 29 years of age, mother of one child, which was dragged out with instruments twenty-one hours before the natural completion of labour. A year later she went to a doctor, who told her she had a badly lacerated cervix, and treated her with tampons, which gave her great relief for the time. But getting worse again soon, she went to Dr. Reddy, who diagnosed cancer of the cervix, and urged her to have vaginal hysterectomy at once. He kindly called me, and I removed the uterus within a few days of his first seeing her. As it was difficult to draw the uterus down, I employed the clamp method, and unfortunately caught the right ureter in the clamp. For two days afterwards, on removing them, there was a slight trickling of urine from the vagina. Transplantation was performed in the same way, as in

the previous case, but was not at first successful, because the traction was too great owing to shortness of the ureter, although the bladder had been detached from the symphysis so as to bring it an inch nearer to the end of the ureter. It only partially pulled out, in about one quarter of its circumference, and a month later a second operation completely cured it, and she is now perfectly well.

The third case was a woman with a large, broad ligament cyst, extending up to the liver. As it had dissected up the posterior layer of peritoneum, it required a great deal of tying and cutting in order to get it out at all. In one of the many bands holding it down was the left ureter, which was carefully avoided until near the end of the operation, when it was picked up without being recognized until the scissors had gone three-quarters through it, when the mucous membrane of the ureter showed what had been cut. It was carefully sewed with two layers of black silk sutures, the first row interrupted and the second continuous. As it was then found impossible to extract the last portion of the cyst from the depths of the pelvis, where it was imbedded among arteries and veins, I resorted to the old plan of marsupialization, that is, cutting the tumour off at the level of the abdominal wall, and sewing the edges of it to the peritoneum. One drainage tube was put in down to the bottom of the cyst and another to the cut in the ureter. There was no leakage from the ureter, and the tube was removed in two days, and the cyst drainage tube was removed in a week, when it ceased to be required. The patient made a good recovery, and is now well.

The ninth regular meeting of the Society was held Friday evening, February 3rd, Dr. J. A. Macdonald, President, in the chair.

Dr. Bell.—This specimen of hypernephroma was removed from a young married woman, aged 37 years, on January the 19th. She had always been healthy, was the mother of three children, and had first noticed a small lump about two years ago, when she was in the third month of pregnancy. There had been practically no symptoms, and never any hæmaturia, though at times there was frequency of micturition, and lately a little pain and some tenderness. On examination, this specimen was reported by Dr. Adami to be a lipoma of the kidney.

In this connexion I wish to show these plates of a similar tumour which I removed in the General Hospital in 1890. The specimen itself, which was in the museum, has unfortunately been lost. The patient was a French Canadian woman, aged 39 years, the mother of seven children, with a tuberculous family history, suffered from a septicæmia, which had extended back to the previous December. She was admitted to the hospital on September 15th, and operated on in the

beginning of October, 1890. From the onset of the septicæmia, beginning in the previous December, there had been fever, night sweats, loss of flesh, etc. A tumour was also felt in the right lumbar region anteriorly, and while it was thought to be a kidney tumour, I could not help thinking that it had something to do with her symptoms. The kidney was therefore removed, but she died sixteen hours later from some septic process, without any accident or cause attributable to the operation. The tumour was very carefully studied at the time by the late Prof. Wyatt Johnston, and reported in the Montreal Medical Journal for February, 1891. He made a diagnosis of alveolar adenoma.

Hypernephroma is a term which was applied by Birch-Hirschfield in 1896 to a class of tumours which were thought to have their origin in the tissues of the suprarenal gland, either in the gland itself or in the so-called rests of adrenal tissue. Grawitz, in 1883, promulgated the theory that a large class of kidney tumours had their origin in the suprarenal gland tissue. He especially included tumours which had been previously called renal lipomata, and also gave to the class above mentioned the name Struma lipomatodes aberrata renis. Now, while the term hypernephroma implies the origin of these tumours from adrenal tissue, it does not follow that such tissue can always be demonstrated in the fully developed, and much less in the degenerated tumour; and, besides, there is great diversity of opinion among pathologists as to whether such tumours do originate in adrenal tissue or not. In fact, the pathology of these tumours is far from being settled. Clinically, however, we recognize a class of kidney tumours which are sometimes benign, sometimes malignant, and which, while sometimes apparently at first benign, suddenly develop the characters of malignancy later on, and probably at times such tumours undergo degenerative changes, which alter their original characters entirely. These tumours are distinctly differentiated by clinical history and gross morbid anatomy from all other kidney tumours—tubercular-carcinomatous, etc. This distinction was pointed out by Billroth in 1891. These tumours have been described as lipomata, sarcomata, adenomata, angiomata, angiosarcomata, adeno-sarcomata, myxomata, endotheliomata, and various other combinations, such as struma sarcomatodes adrenalis aberrans (a case which I brought before this Society in 1898). Since the introduction of the term hypernephroma, tumours of this class have been described clinically by nearly all surgeons who have reported cases as hypernephromata, and the various terms above mentioned have been practically dropped.

J. G. Adami, M.D.—Criticising the employment of the term hypernephroma to designate the tumour brought forward by Dr. Bell, Dr. Adami defined the term hypernephros as merely a translation into Greek

of the term suprarenal, from which it follows that a hypernephroma is a tumour formed of adrenal tissue. Such a tumour may occur either in the adrenal itself or, according to Grawitz, in the kidney, a certain group of kidney tumours being best explained as being derived from aberrant rests of adrenal tissue. If this be so, the term is only rightly to be employed in connexion with the kidney, when there is adequate evidence that either the structure is that of an adrenal tumour or that it corresponds with other tumours, which those who have made a particular study of this subject think are satisfactorily demonstrated to be of this nature, even though the appearance of the tumour depart considerably from those of adrenal tissue proper. In the case under discussion the main component is simply fat cells, by which is meant cells of the signet ring type, distended or infiltrated with fat. In his opinion, therefore, the tumour ought to be regarded as a lipoma. He pointed out there are two types of fat-containing cells, which are frequently confused, fat cells proper having the signet-ring type, and cells having the appearance of fatty degeneration, cells containing throughout their protoplasm numerous small fatty globules. Now, even in a healthy adrenal, it is very common to meet with cells having the appearance of this second type, though recent observers have shown that the contents of these cells are not true fat. And in adrenal tumours this fattily degenerated appearance of the cells is singularly common; in fact, the pale greyish appearance characteristic of the hypernephromata would seem in the main to be due to fatty change. So far as he had seen, neither in the normal adrenal nor in the hypernephromata proper did one ever get true fat cells. While connective tissue cells could take up fat and become fat cells proper, he did not believe that adrenal cells could do this; nor, in reviewing the literature of the condition had he come across any cases where this could be definitely stated. The nearest he had found to such a transformation was in the case referred to by Albarran and Imbert, in which one part of the tumour was of the adrenal type, the other composed of fat cells proper. Albarran and Imbert regard this as being a mixed tumour, and to explain the development of such they point out that the embryonic kidney is deeply lobulated, and suggest that in this early period a small portion of aberrant adrenal tissue became enclosed between two of these lobules, so also there might be enclosed a certain amount of surrounding connective tissue, and as the lobules fuse in the process of development, both tissues might have become included, and might have truly taken upon themselves this active growth, a hypernephroma developing from one tissue, a lipoma from the other.

In his opinion, it was still a matter of doubt as to whether the group of tumours now included as renal hypernephromata were all of adrenal

origin. There is more and more a tendency to describe these as endotheliomata, or more exactly as peritheliomata, as overgrowths, that is, either of the endothelium of the vessels of the part or of the adventitial tissue round about these vessels, and it was no sound argument to say, because these peritheliomata may develop in the adrenal, that when they occur in the kidney they are of adrenal origin. There is no justification for supposing that the vascular structures of the kidney cannot themselves develop peritheliomata. It was worthy of note that in the present case there were areas that suggested endotheliomatous or peritheliomatous structure, and in which various stages could be made out between cells of the actively proliferating connective tissue type and developing fat cells. Dr. Bell had based his use of the term upon the practice of two able and greatly respected American surgeons, but he would again protest against the tendency now being shown, more particularly on the other side of the border by his surgical confreres there, to use terms in a careless and slip-shod manner.

C. B. KEENAN, M.D.—The correct class in which to place the tumour under discussion is difficult to determine. First, as to whether it is benign or malignant. One finds here three tumours. There is the one very large tumour and two much smaller ones.

The larger tumour is very fatty, while the smaller ones show almost no fatty change; but, save for this secondary change, the tissues of all three are identical. None of these tumours are encapsulated.

On these grounds, I judge the two smaller masses to be metastases from the larger, and so think this to be a malignant tumour.

The minute histology shows briefly vessels with hyaline, thickened walls, and in other spots a single layer of endothelium. Around these vessels are cells resembling somewhat those of a spindle celled sarcoma. Further away from the vessels these cells become larger, clearer and polygonal in shape.

Appearances suggesting fat infiltration are seen in places, but possibly also suggesting to me a fatty degeneration going on to complete destruction of the cell. This condition was well described by Grawitz in 1883. The arrangement of cells here undoubtedly suggests an endothelioma or a perithelioma more than an adrenal tumour, but all observers are agreed that from the histological appearance alone one cannot separate the hypernephroma from the endothelioma; therefore, I would term this a Grawitz tumour, in which the fatty changes were more marked than ordinarily.

E. W. ARCHIBALD, M.D.—Having studied the gross and microscopical appearances of the tumour under discussion, I have come to conclusions which differ somewhat from those already expressed; and I would like

to discuss briefly the histological diagnosis of the case. The actual existence of hypernephroma in the sense that Grawitz gave to it is now generally accepted as proven, in spite of the contention of some (de Paoli, Driessen) that it is in reality an endothelioma of the kidney. The main points, histologically, in a hypernephroma are that it is a tumour situated underneath the kidney capsule, composed of large cells arranged in columns or clumps within alveoli, so as to recall in a general way the structure of the adrenal cortex; that the cells have a very large amount of clear protoplasm, which usually shows considerable fatty degeneration; that these cells have a very close connexion with the vascular endothelium; and, finally, that the vascular supply, mainly capillary, is abundant. Minor points concerning glycogen, lecithin, pigment, giant cells, etc., possess no serious diagnostic value, although they may become important in confirming a diagnosis. What, now, do we find histologically in the present growth? We find that it is a complex tumour containing those main elements: the fatty, which largely predominate; the vascular, consisting of numerous thick-walled vessels, often showing perithelial proliferation and often, also, a hyaline degeneration, together with many capillaries; finally, the cellular, to be described later. It is true that the large preponderance of what looks like fat tissue suggests at first sight unequivocally the diagnosis of lipoma, and indeed it would be difficult, if not impossible, to disprove that conclusion. Nevertheless there are appearances in this tumour which, to my mind, point strongly towards a diagnosis of hypernephroma. These are, first, the presence here and there of clumps of cells, which, with their large clear cytoplasm showing vacuoles of all sizes, and their arrangement in a fine reticulum, and their proximity to the vessels, resemble those found in the proven hypernephromata. Further, these show transition stages in the matter of fatty degeneration between the typical "clear" cell and the one which is entirely transformed into fat; while, again, in the midst of what looks most like ordinary fat tissue, there are fat cells with a well-staining nucleus in the centre, and not at the periphery.

Secondly, the large admixture of the vascular element, as above described, would seem to be less characteristic of the true lipoma than of a more complex tumour which has undergone fatty change, especially considering the perithelial proliferation and the hyaline degeneration, which are frequently mentioned in descriptions of hypernephromata. Thirdly, the very complexity of the tumour speaks somewhat against the diagnosis of lipoma, which is usually very simple in construction. One may mention, further, in a general way, that lipomata in the kidney are extremely rare, only six or seven cases being recorded, whereas hypernephromata are relatively frequent. One other point, which is

certainly rather open to discussion, concerns the finding in the centre of the growth of small masses of tissue, which to me look very like unstriped muscle, but which others consider fibrous. If muscular, the fact might speak rather for an adrenal origin than for true lipoma, considering the presence normally of unstriped muscle in the adrenal cortex. It must be confessed that the above considerations are insufficient probably in the present state of our knowledge for a definite diagnosis of hypernephroma; nevertheless I believe that they are valid enough to suggest that diagnosis strongly. What they do very decidedly indicate is the necessity of further study along the lines of fat production in hypernephroma.

B. D. Gillies, M.D.—I saw three or four of these Grawitz tumours, and one I studied microscopically in Vienna. With regard to the clinical side, I may say that Kolisko was able to demonstrate, from the urine of one or two persons, the presence of a Grawitz tumour from the blood clots where hæmaturia was present. There were endothelial cells round the clots, and he called it an endothelioma or perithelioma. Clinically, he said they might be rapid in their course, moderately rapid, or extremely latent. In the tumour that I examined myself, I may say that macroscopically it was an irregularly shaped kidney with masses of fatty tissue, inside of which there was degenerated tissue, which seemed to be darker in colour, and seemed to me clotted blood, thus accounting for the hæmaturia which was present. Microscopically, the sections showed cells in columns, but in other parts they showed cells in masses, which were extremely large and clear. One would have great difficulty in differentiating them from simple fat cells. The structure is that of an organized tissue, not simply fat tissue. There are certain parts in this tumour under discussion where we have large vessels with thick walls, due apparently to increase in endothelial tissue about the lumen, which makes one think that we have not to do with a simple lipoma; but whether it is an endothelioma that has degenerated or whether we have to do with a hypernephroma I am not able to say. Endothelioma and perithelioma were used indiscriminately in the clinical teaching at Vienna. In tumours of adrenal origin we are especially liable to error, for in microscopic appearance they may little resemble the organ from which they spring.

Dr. Bell.—I quite agree with Dr. Adami with regard to the use of this term. If we take the word in its literal meaning or the meaning given to it by Birch Hirschfeld, of course we should not call any tumour a hypernephroma if it does not show evidences of having originated in adrenal tissue; but is it always possible to find evidence of this? In this particular tumour I do not think you can exclude the possibility that such evidence may be concealed in the large quantity

of pure fatty tissue. If this tumour does not contain adrenal tissue, of course the term is a misnomer, but I think the term lipoma is equally so. It is true it is fatty tissue, but that is regarding it only from a tissue point of view, and it has nothing in common with the lipomata we see elsewhere. In the other case the diagnosis was an adenoma, and yet in its history and gross morbid appearances it is indistinguishable from this tumour, and I think that this term is equally a misnomer.

The important fact, however, is that we now recognize clinically a group of tumours of the kidney which have certain characters in common, and for which we have no generally accepted name, except that the names "Grawitz's tumour" and hypernephroma are coming into more general use by surgeons in designating such tumours. And moreover it seems to me that we may perhaps extend this class in two directions, so as to include, first, those cases of hæmaturia, which, even after an exploratory operation, cannot be explained—the explanation probably being that they are due to small hypernephromata, in which development is arrested, and which never reach the stages of a tumour formation; and, second, at the other end of the list, some of those large chronic cysts of the kidney, which are generally diagnosed as chronic hydronephrosis, and in which, even after operation, we find no evidence of obstruction in the ureter and none of the essential characters of urine in the cyst contents.

Geo. H. Mathewson, M.D., presented a living case showing spontaneous dislocation of a cataract. Dr. Mathewson pointed out that spontaneous dislocation of the lens was not of common occurrence, and, naturally, it was still more unusual to see this accident in a lens which was the seat of cataractous changes. On August 4th, 1904, the patient consulted Dr. Mathewson at the Ear and Eye Clinic of the Western Hospital in the hope that he might have some operation performed to improve his eyesight. It was found on examination that the right eye was quite blind. The left eye showed a cataract of brownish colour, while the pupil was widely dilated and the anterior chamber unusually deep. Patient could see "finger moving" in front of left eye, but was unable to count fingers so held. He volunteered the information that he had not seen well with the left eye for many years. Projection of light was fairly good.

While the case did not promise a brilliant result, it was decided to yield to the patient's request, and remove the cataract. It was first necessary, however, to cure a severe chronic conjunctivitis which was present, and would have rendered any operation on the eyeball very hazardous. Suitable treatment was therefore prescribed, and the patient was told to report in two weeks' time.

On August 18th the conjunctival disease was found to be very much

improved, and he was directed to continue the treatment. At his next visit, on September 8th, the cataract was not to be seen, and on closer investigation it was discovered lying in a horizontal position in the vitreous. It had fallen backwards so that the anterior surface now looked up, while its posterior surface looked down. Its lower edge was nearly in its normal position, while its upper (originally) edge lay deep in the vitreous. This is exactly what the ancients attempted to do when they performed the operation of reclination by means of a needle hundreds of years before cataract extraction was devised.

While our patient has a clear pupil, totally free from obstruction, he unfortunately has had but slight improvement of vision, in that he can only see enough to count fingers at four feet. It was found that he had still four dioptres of myopia, so that he must have had about twenty-two dioptres when the lens was in situ, and as an accompaniment of this high degree of myopia, there was an extensive degeneration of the choroid and retina in the macular region, which accounted for the poorness of vision.

In the death of Magdalena Gelly the students of the Viennese hospitals have lost a valuable clinical subject as well as a teacher. This woman had acquired by practice a singular control of the muscles of the pharynx. She was able to undergo prolonged laryngoscopic examinations without reaction of the vocal cords, could produce at will spasmodic contraction of the Eustachian tube, and owing to a special sensitiveness of the mucous membranes, she was able to tell students when they were at fault in properly catheterizing the tube. She would even introduce foreign bodies into the respiratory passages and allow the advanced students to practise their removal. She made her living in this manner, charging two florins for each clinical session.—*New York Medical Journal.*

E. O. Jordan has been investigating the causes of the Winnipeg typhoid epidemic for the municipal authorities, and reports that the lack of sewer connexion, the exposed privies, the partial use of unfiltered river water and the careless handling of the patients in the homes, to be responsible for the larger part of the epidemic. The condition of the outhouses he finds particularly bad. Contagion was easily transferable by flies, household pets and children playing in the alleys near unprotected outhouses. He emphasizes the need of remedying all the conditions enumerated. A full account of his investigation appears in the issue of the *Journal of the American Medical Association* for February 18th, 1905.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXXIV. APRIL, 1905. No. 4.

REGENERATION OF THE AXONES OF SPINAL NEURONES IN MAN.

BY

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Gentlemen,—The subject I have to discuss to-day is regeneration of the axones of the spinal neurones in man. I shall deal with the results of personal observation to a large extent and have considered it expedient to make but few references to the extensive literature bearing upon the subject.

Considerable doubt as to the possibility of regeneration taking place, is widely expressed. Numerous experimenters have operated upon monkeys, dogs and other animals; but so far as I am aware—except in the recent paper by Dr. James Collier in *Brain*, where he states that immediate suture experiments upon the spinal cords of animals have shown that regeneration is possible—have failed to establish the fact that regeneration takes place in the spinal axones.

Sir William Gowers, in his text book on Diseases of the Nervous System, Vol. 1., in discussing transverse myelitis of the cord refers to the possibility of regeneration taking place, and he notes a case where at one time a very considerable destruction of the cord was present with symptoms approaching transverse division, namely, complete motor paraplegia, grave sensory disturbances, increased reflexes, bladder and rectal retention, etc. After many months a fair return of motion and sensation took place, spasticity being a marked feature. After the lapse of years the patient died from some intercurrent ailment. Pathological sections of the cord were obtained at the seat of the myelitis, and in the crossed pyramidal tracts and other areas of the cord were found a number of very minute axones in a situation where normally large nerve fibres are usually seen, and he was of the opinion that those smaller fibres were regenerated axones.

I do not know of any case in the literature in which transverse divis-

Read before the Pan-American Congress at Panama, January, 1905.

ion of the cord in man was known to be complete, where regeneration has been demonstrated histologically and clinically, except in the case I shall discuss later, where complete transverse division of the cord was seen at the operation, and after the lapse of months clinical symptoms of regeneration were present with histological evidences at the post-mortem examination. There have been one or two cases reported as examples of total lesion with persistent knee jerks, but, that the lesion was absolutely complete, admits of doubt.

The supposed reason why regeneration does not take place in the spinal neurones of man, is the absence of the neurolemma sheath in those neurones. It has been established by many workers that the nuclei of the neurolemma sheath is a considerable factor in the regeneration of the peripheral nerves.

Being of the belief that regeneration could occur as shown by Gowers and others, I decided that upon the first opportunity, I should use every means in my power to aid such a case by appropriate treatment, and thereby help to produce regeneration.

In the large majority of cases injury of the cord takes place in the lumbar or lower dorsal segments. The time that would elapse before regeneration took place would be very considerable on account of the injury occurring in that part of the axones so remote from the cell bodies which are the seat of their vital functions. It is a well known fact that in suturing a divided peripheral nerve in the distal end of an extremity, considerably more time elapses before function is re-established than in those cases where the peripheral nerve has been sutured in the proximal part of the extremity, that going to show regeneration takes place quicker when the injury is in close proximity to the cell body.

Why is it, if regeneration does occur, as shown by Gowers, that so few cases improve after serious transverse myelitis, traumatic or otherwise, and that none, as far as I am aware, recovered where transverse division of the cord occurred due to fracture dislocation, and where at the operation complete severance of the cord was detected? Unfortunately many surgeons and neurologists, with serious results, frequently recommend, in cases of fracture dislocation of the spinal column associated with motor and sensory paralysis of the lower extremities, that operative procedure be delayed. In other cases where operation is advised at once the surgeon cuts down and removes the pressure on the cord and if transverse division is present, the prognosis being very serious, the patient is, as a rule, put back to bed and little more is done, with the result that grave secondary changes take place in the muscles, blood vessels and nerves and in that part of the cord below the seat of

pressure or of transverse division. The extremities are allowed to fall by gravity into any position, and thereupon, stretching of certain muscles takes place, which hastens the onward progress of the condition. I have seen quite a number of cases and have read reports of others, where fracture dislocation had occurred and pressed upon the cord, producing motor and sensory paralysis, etc. Operation being performed at once, no damage to the structure could be detected macroscopically, yet the after results were very unsatisfactory.

The reason for this is as follows: If pressure be exerted upon the spinal cord suddenly, and it may be only momentarily, no changes may be detected in the structure by the eye, yet there is no doubt that a marked molecular change occurs in the axones of the spinal neurones inhibiting function,—as shown clinically by the paralysis of motion and sensation in the lower extremities, etc. In cases where the pressure is not momentary, but allowed to continue for a week or ten days and at the operation no alteration in the cord is detected, yet, like the above, the molecular change must be very grave and no doubt greater than the results where pressure is only momentary. Here not only molecular change may be present, but also local anæmia from pressure on the blood vessels, which if long continued will lead to necrotic changes.

The majority of cases of fracture dislocation and pressure on the cord, when brought into the hospital show the symptoms of motor and sensory paralysis with increased reflexes and spastic condition, pointing to a serious involvement of the cord, but not to transverse division, this last being indicated in those cases in which flaccid and sensory paralysis and loss of the reflexes is the symptom complex. An examination of the muscles of the lower extremities, if made at entrance usually show no alteration from normal to electrical stimulation. That is to say, when the lesion has been confined, as it is in the large majority of cases, to the lower dorsal cord, affecting only one or two segments, the lumbar enlargement is free from hæmatomyelia or any such injury as would produce an immediate effect on the lower motor neurone. After a day or so has elapsed in many of those cases, the reflexes are diminished and shortly after this reaction of degeneration becomes typical.

Now we see some cases may pass from a spastic to a flaccid state with abolition of the reflexes and reaction of degeneration, and, in a period varying from a few days to a week, present a typical picture of transverse division of the cord—motor and sensory paralysis, absence of the reflexes, flaccid state of the muscles and typical reaction of degeneration. If operation were carried out at this point, we should probably find on cutting down

to the cord no alteration in structure macroscopically. Pressure being removed, the progress of the case is more frequently downwards than stationary. Why is this so? Pressure has produced molecular changes in the axones preventing stimulation from coming down or going up, with the result that we have isolation alteration or physiological deterioration, due to stimulation not being carried to the cells of the anterior horns below the lesion, with the result that changes such as flaccidity and reaction of degeneration in the muscles occur clinically, as above stated.

The cell bodies of the neurones to carry on their functions must have nourishment as well as stimulation, or they undergo degenerative changes or physiological alterations, and following this, secondary changes take place in the muscles and other structures of the extremities, as they, likewise, require stimulation and must be bathed in a healthy circulation. Now, stimulation and circulation cannot take place if the injury to the cord is as severe as above stated, and it is necessary that proper treatment such as electricity, massage and the prevention of deformity by the use of splints, and of adhesions of the joints by the frequent movement of the limbs should be carried out.

It has been shown by James Collier in cases of transverse division of the cord with a flaccid and sensory paralysis and loss of reflexes, that, by the use of electricity with needle electrodes placed into the muscles or nerves, after a time sufficient tone is produced in the muscles that upon striking the patella a reflex can be obtained. This goes to show very clearly the wonderful effect of electricity in producing tone, the presence of tone being an expression of an approach to normal condition of the structure acted upon.

The order of appearance of motor and sensory paralysis in progressive lesions is practically constant in the large majority of cases as follows: Motor paresis and spasticity, increase of the reflexes, anæsthesia below with local hyperæsthesia, sphincter paralysis, thermoanæsthesia and analgesia, tactile anæsthesia, followed by flaccidity with loss of the deep reflexes, progressive lowering of the faradic excitability, muscular wasting and loss of the sphincter tone. Pain and temperature are always earlier affected, and to a greater extent than sensibility to touch. The sensory loss in the usual cases, such as those involving the lower thoracic region involves the skin in order of the length of the sensory neurones supplying it, the soles of the feet being affected first, then the legs and later the thighs, but when the anæsthesia reaches the trunk it extends upwards in segmental order. When there is recovery the first signs to show themselves are, as a rule, subjective sensory disturbances. These are manifested in some cases first in the feet, while

in others the distention of the bladder during the routine lavage is felt, or the patient becomes conscious of the act of micturition or catheterization. Next in order, slight tone makes its appearance, and this can be shown by tapping the muscle, which contracts. Later on the reflexes appear and become markedly increased and, associated with this, is a prominent spasticity, and faradic and galvanic excitability become normal. Sensibility then returns in the following order: Touch, pain, temperature, and usually the lowest sacral segments are sentient before the others. Voluntary power is last to return, the flexors being earlier affected than the extensors. Sometime after the patient has been able to walk the increased reflexes, spastic condition and Babinski sign are apparent, the latter being invariably the last of all to disappear.

Owing to the kindness of Dr. G. E. Armstrong, the following case came under my observation.

J. C., aged 48 years, a sailor, was brought into the Montreal General Hospital, under Dr. Armstrong's care in the spring of 1902, suffering from fracture dislocation of the spinal column in the region of the ninth and tenth dorsal vertebræ, with symptoms of flaccid paralysis, complete loss of motion and sensation and of the superficial and deep reflexes of the lower extremities and bladder and rectal retention. Twenty-four hours after admittance, Dr. Armstrong cut down over the seat of the fracture and removed the laminæ of the ninth and tenth dorsal vertebræ. Upon opening the dura mater a complete severance of the cord was found in this situation, with a gap of fully half an inch in extent between the two ends. On stimulating the anterior roots of the first and second lumbar segments with mild faradic current, with needle electrodes, the patient being only very slightly under the influence of the anæsthetic, contraction took place in the muscles of the leg. Stimulation was then applied to the posterior roots of the same segment and this was also followed by contraction of the muscles.

The above experiment was carried out for the following reasons: Considerable discussion had been going on as to the symptom complex present in cases of transverse division of the cord. Bastian, Brunn and others held the opinion that total transverse division of the cord was always followed by a flaccid paralysis, motor and sensory loss, with permanent abolition of the superficial and deep reflexes; others thought that while flaccid paralysis might occur at first, sooner or later a spastic condition set in. This second view was partly due to the influence of the opinions of many authorities who mistakenly compare the effects of transverse sections in dogs and in the higher apes with the sequence of events in man. Here also, physiologists frequently fail in impressing upon the mind of the student that the physiology of the nervous system

in man and in the higher animals (and even in the higher apes) is not comparable. The student often sees the experiment carried out in those animals; they are printed upon his mind, and when at the bedside he is too apt to apply the physiology of the higher animals to man.

According to this second group of observers, if spasticity did not occur and flaccidity and loss of the reflexes still remained, not only in all probability had a transverse division of the cord occurred, but also a hæmatomyelia or some destructive lesion had taken place in the lumbar segment below the transverse lesion, and thereby injured the lower motor neurones, with the result that a flaccid paralysis was present.

Here in this case I was able to establish the fact that the segments below the division was in a more or less healthy condition, otherwise I could not have obtained a contraction of the muscles to faradic stimulation.

The separation of the cord having been found at the operation, as above stated, no hope of recovery was entertained, the patient was brought back to the ward and placed in bed.

This case, I thought, was a very suitable one to observe whether or not spasticity would develop, and I obtained permission from Dr. Armstrong to carefully observe the patient from time to time and carry out any method of treatment I could suggest. I held it advisable that an energetic and frequent application of faradic and galvanic stimulation be made to the extremities, so as to keep the muscles in as healthy a condition as possible. Fortunately, at this time I had a group of students who had taken a voluntary course in neurology extending over some six weeks, and with whom I had frequently discussed the ætiology of the reflexes and the symptom complex in spinal cord cases. Very little inducement was necessary to obtain relays of students to help me in treating the patient in the hope of arriving at some definite conclusion as to what symptoms are present in a case of this description, where, at the operation we had been able to demonstrate that the cord below the lesion was more or less healthy. Through their willingness I was able to obtain help and carry out treatment that I could not otherwise have done in a ward of a general hospital. Fortunately the patient was an interesting man. He was a sailor by occupation, had a retentive mind and related pleasing anecdotes about the different lands he had visited. He was of a genial disposition and had the ability of pleasing those who took part in his treatment. All the above factors, though seemingly unimportant, had a great deal to do with the results obtained in this case.

Weeks and months passed, but no return of the reflexes or alteration in the flaccid state of the limbs took place. By the treatment carried

out, wonderful results were obtained, inasmuch as singularly few trophic or vaso-motor disturbances appeared in the extremities. Careful washing out of the bladder was attended to and everything was done to keep the patient in as perfect a condition as possible. No vestige of any sensory disturbances, subjective or objective, were at any time mentioned as occurring.

At the end of six months, no alteration taking place, I felt justified in holding to Bastian's opinion, that total transverse division of the cord is followed by permanent flaccid paralysis, sensory loss and abolition of the reflexes. At the operation the lower segment was found uninjured, since stimulation by the battery gave us positive contraction in the muscles. Here, then, by this means, for the first time on record, it was shown that the permanent loss of the knee jerk and the flaccid state are due to the removal of the higher centres, and not to any concomitant injury to, or consecutive structural change in, the lumbo-sacral segments.

Eleven months after the operation, and just about the time that the work of Purves Stuart and Ballance was brought out, stimulating our interest in the regeneration of the peripheral nerves, Dr. Armstrong wished to know whether I could suggest anything in the way of helping our patient. It had been shown that transplantation of the peripheral nerves could be successfully carried out and that even the intervention of foreign substances, such as catgut ligature or similar material placed between the ends of a divided nerve, would help to establish regeneration. Dr. Armstrong asked me whether I thought it would be of any use to transplant a dog's cord between the ends of the divided cord of our patient. My reply was that I did not know what would occur, but did not think any serious results were likely to follow and it might be worthy of a trial. He decided to have this operation carried out. A large dog was obtained, placed under chloroform, and an operation to expose the cord was carefully done under the most strict asepsis by two assistants, Dr. Barlow and Dr. Campbell. While this was being done our patient was put under chloroform and placed on the table. An incision was made over the seat of the old lesion, the dura mater opened and the cord exposed. At this time we found that a separation now existed between the two ends of the cord, about one and a half inch in extent. With a mild faradic current the anterior and posterior roots in the lower segment of the cord were stimulated, and a faint response took place in the muscles. The dog's cord to the extent of three inches was laid alongside the upper and lower segments of the patient's, a few fine stitches united the pia arachnoid of the one to the other, the dura mater was closed, the wound sutured, a plaster jacket applied and

the patient taken back to the ward. He made a perfect recovery from the operation, the temperature on no occasion going over 100.

In the summer of 1903 I had the pleasure of informing Sir Victor Horsely of this operation having been carried out, and the results above mentioned, and he made the flattering remark that he thought Dr. Armstrong had achieved a great triumph in surgery in having carried out this operation without any septic results following; as one is well aware how difficult it is to operate on a dog with perfect aseptic technique.

A month passed without any apparent change. Fortunately I had another group of students who had attended my voluntary Christmas Vacation Course. I was able to instil in them an interest in the case, and was thereby able again to obtain help in giving the electricity and massage that I could not otherwise have done. The fifth week after the operation the patient was conscious of flatus in the lower quadrant of the abdomen. This he had never experienced before. Six days following this he became conscious of the passage of the catheter, when routine lavage of the bladder was being carried out, and ten days later he was able to inform the orderly that his bowels were about to move, and could tell when fæcal matter passed the rectum. On this date, for the first time, he complained of subjective sensations of pins and needles in the right foot, and a week later of the same symptoms in the left foot. Two months after the operation he described vividly and with all assurance subjective disturbances in both feet extending up to the knees. The passage of the catheter and the evacuation of the bowels were much more clearly felt.

At first we were inclined to think that this must be purely imagination, but when one heard the patient describe the condition with such exactitude, its coming and going, one began to think otherwise. Another reason for our coming to the belief that those feelings were real was that after the first operation the patient had as much care as after the second, and his desire and hope of recovery was just as keen if not more so than after the second, yet he never by any means gave the suggestion that such symptoms as above described were at any time present. Little alteration, progress or otherwise, from the above was noted until about the eighteenth day after the operation, when it was detected for the first time that with percussion of the pleximeter upon the muscles of the flexor aspect of the thigh and leg, the presence of a certain amount of tone was noticed by the contraction of the muscle. Neither at this time or at any time since the accident had voluntary movement or the return of objective sensory symptoms taken place. The reflexes, superficial and deep were still absent.

Sixteen days after this, for some unaccountable reason, the tempera-

ture ran up to 103°. The chest was normal and the bladder showed no symptoms of cystitis. The urine was carefully examined by the house surgeon, but nothing found pointing to any kidney trouble. From that day the patient began to lose his appetite and failed physically. Everything was done in the way of medicinal treatment, nourishing diet, etc., to keep up his general condition, but he slowly grew weaker and weaker, and finally died in the course of a fortnight. At the post mortem a large abscess was found in the right kidney, and this had been the probable cause of his death. Strange to say, as above mentioned, the urine was examined on two different occasions, after the onset of the fever, by the house doctor, but nothing pointing to any such disturbance was found.

The cord was carefully removed and placed in Muller fluid to harden. Six weeks later I opened up the dura mater and found lying between the two ends of the cord, where the injury had occurred, a diffluent mass. Sections of the cord above and below the lesion were put aside for Pal-Weigert stain, and the dura mater with its adherent mass between the ends of the cord was likewise prepared for Pal-Weigert stain. The sections of the upper segment revealed the typical ascending degenerations in the fields of Goll and Burdach, the direct cerebellar, and Gower's tracts. The sections below showed definite degenerations in the crossed and direct pyramidal tracts. The dura with its adherent substances which lay between the ends of the cord, after being stained by the Pal-Weigert method, showed a mass of minute myelin sheaths of nerve fibres which you may see by looking through the microscope placed before you. These fibres can be seen lying closely adherent to the dura mater and when traced upwards and downwards through the different sections, unite with the segments of the cord above and below, demonstrating the fact that regeneration of the axones of the spinal neurones had taken place, to a limited extent. Pal-Weigert stain, as you know, stains only the myelin sheaths. At the time of the operation the dura mater between the two segments was perfectly clear of nerve fibres to the naked eye.

I do not for a moment suggest that the dog's cord retained its vitality after it had been removed and placed inside the dural sheath, nor would I like to suggest that it was the dog's cord started the regeneration. I only want to speak here of the following facts, which you will see demonstrated under the microscope, that the nerve fibres are present and that they unite the two segments of the cord. Unfortunately, I did not place the cord in formalin or alcohol and, therefore, was unable to make a study of the lower segment by the Nissl method. From the sections you will see that this lower segment is comparatively

speaking, in a fairly healthy condition. Sections through the cauda equina showed very little change, indeed, 90 per cent. of the nerve fibres making up this structure were to all intents and purposes normal by the Pal-Weigert stain.

I had the pleasure of showing the specimens at a meeting of the Lister Club at McGill University, where the pathologists without hesitation assented to the view that regeneration had taken place.

The success in this case, I think, was largely due to the patient having been so assiduously treated by electricity, the prevention of contractures and the frequent movement and massage of the extremities.

Since I have been connected with the Montreal General Hospital quite a few cases of pressure paralysis, without total lesion with motor and sensory paralysis, the result of fracture dislocation of the spinal column, have come under my care, where operation was carried out a very short time after the accident, yet satisfactory results were not obtained. In my opinion this was due largely in some of the cases to the fact that the massage, electricity, etc., were not applied.

In one case only, where I was fortunate in obtaining assistance in carrying out treatment, were good results obtained. This was of a patient of Dr. Kenneth Cameron's, who was brought into the hospital in the summer of 1903, suffering from pressure on the cord, the result of fracture dislocation, with complete flaccid paralysis, loss of the reflexes, grave sensory disturbances and bladder and rectal retention. At the operation Dr. Cameron found a fracture dislocation and displacement of the eleventh and twelfth dorsal laminæ with pressure on the cord, the result of the fracture, yet no macroscopical alteration in the structure was detected. The wound was closed up and the patient placed in a plaster jacket. More or less constant electrical treatment was carried out for six months. At the end of that time sensation had partially returned, and this was followed in a couple of months by the return of slight voluntary power. To-day, after a lapse of a year and a half, the patient comes regularly to my clinic for treatment, and is able to walk into the room without the aid of a stick.

The following is a case of Dr. Alexander Blackader's, which he kindly gave me permission to watch. I shall here relate only the essential facts denoting that a marked destructive lesion and probable hæmorrhage had occurred in the region of the fifth, sixth, seventh and eighth cervical segments of the cord on the right side, producing flaccid and atrophic paralysis of the right arm and spastic paralysis of the right leg with sensory symptoms of syringomyelia symptom complex, and the presence of enophthalmos in the right eye and exophthalmos in the left. For two months after entrance to the hos-

pital the patient hung between life and death. At the end of that period he slowly recovered, and in seven months he left the hospital comparatively well. Since that time, two years have elapsed, and, during the interval, he has presented himself for examination, both at my office and at Dr. Blackader's. To-day he is as perfect a type of manhood physically as one could wish to see. He holds a position as locomotive engineer in the Grand Trunk Railway. The photograph, as you see, reveals an absolute symmetry in the muscles of all the extremities, going to show that regeneration of the neurones must have taken place in this case also.

CÆSAREAN SECTION.

BY

H. L. REDDY, M.D., L.R.C.P., Lond.

Physician Accoucheur, Women's Hospital, Montreal.

Mr. President and Gentlemen:—It gives me much pleasure to bring before you to-night, the notes of six cases of Cæsarean Section, operated on by me. In order to shorten the report and save repetition, I will briefly describe the operation performed in the six cases. The usual preparatory treatment for laparatomy was followed in each case when there was time for it, and in all cases the abdomen was made as aseptic as possible. The anæsthetic used in each case was alcohol, chloroform and ether. The patient being anæsthetized, an incision was made in the middle line, $2\frac{1}{2}$ inches above the umbilicus and $3\frac{1}{2}$ below. In all cases bleeding was slight, and a ten percent solution of gelatine easily stopped all hæmorrhage. The peritoneum was opened. The left flank being well depressed and pressure applied on the right side of the fundus aided by one hand over fundus of uterus, it was brought outside abdominal cavity. It was now covered with hot towels and the intestines were kept in situ by hot towels. Towels were also packed around the uterus to keep any discharge from entering the abdominal cavity. A rubber tube was put around the uterus and drawn well down to the cervix to act as an Esmarch when required. The uterus was then opened from a point between the level of the Fallopian tubes as far down as the contractile ring or 6 inches. The wall of the uterus was cut through rapidly, and the placenta, in five of the cases also, with, in each case, very much less loss of blood than would be lost in an ordinary confinement. The part presenting at the opening was seized and the child delivered rapidly; the cord was clamped with Pean forceps and cut; aseptic ergot was given in the buttock hypodermically and the Esmarch re-

Read before the Montreal Medico-Chirurgical Society, February, 1905.

laxed. At once the uterus contracted and little difficulty was experienced in removing placenta and membranes, except in one case. It was then ascertained that the os and cervix were patent for drainage. The uterine wall was closed by interrupted sutures ¼ inch apart of No. 4 braided silk. A Lembert was used to bring the peritoneum together and I found that by the time I had put it in the length of the incision the uterus had contracted so much that it was necessary to put in another to keep the peritoneal surfaces together. The peritoneum was then dried out and filled with saline solution. The walls were closed by three layer of sutures, peritoneal by continuous catgut, musculo-aponeurotic by interrupted silk sutures and the skin by interrupted sutures of silkworm or horsehair. A dry dressing completed the operation. In those cases where it was desired to render the patient sterile the Fallopian tubes were tied in two places and cut between.

Case No. 1, 2,792, Mrs. L., para. 2., aet. 29, Scotch Canadian. Admitted December 22nd, 1902, into Women's Hospital.

Personal history.— Up to 12 months ago presents nothing of note. Menstruation began at 11. In November 1901, she was confined by me of a seven months fœtus, by version with a very great deal of difficulty—the child only weighing 4½ pounds. The conjugate of the brim was found then to be diminished. The woman although large and well formed in every other way had only a diameter at most of 9 cm. or 3½ inches.

Family history.— Two sisters died of phthisis. Nothing else of note.

Present condition.— Circulatory and other systems normal. Patient well nourished—134 pounds—good amount of sub-cutaneous fat. Last menstrual period March 26th, 1902. Computed time of gestation 274 days. Patient understanding from last confinement her condition of pelvic deformity desires a living child and to be made sterile. Cæsarean section was proposed and accepted by her. At 3 p.m., December 25th, labor began at 7.45 p.m., and the pains were coming on every 10 minutes. It was decided to perform the operation as soon as possible, which was done as above described, the whole operation taking about one hour and thirty minutes. The child weighed 6 pounds 8 oz. The skin sutures were removed on the 21st day. There was perfect union the whole length of the incision. When the patient was coming to the hospital, she slipped and fell on her left knee and as a result after the operation an effusion appeared in the joint which gave us the only trouble we had, and was not well when she left the hospital. I have seen her Christmas week, 1904, and her baby and herself are and have been in the best of health.

Case No. 2, 2,849. Mrs. H. Para. 1, aet. 24. Admitted to hospital in 1904, in labor.

Personal history.—Last menstruation ended August 7th, 1902. Has been deserted by her husband under cruel conditions which has had an exceedingly bad effect on her both mentally and bodily.

Family history.—Father and brother died from accidents, mother and sisters from childbirth—causes cannot be ascertained.

Present condition.—Respiratory, circulatory and genito-urinary systems normal.

General system.—Height 4 ft. 6 in., weight 89 lbs. Condition emaciated, on examination. Presentation above brim left occipito-anterior position. Heart 156. Child calculated to be about 5 to 5½ lbs. Mensuration shows a justo minor pelvis of male type. Internal conjugate calculated to be about 7 cm. or 2¾ inches. Vagina unusually small. The ischiatic spines seemed to curl inwards and three fingers introduced into the vagina with difficulty, seemed to show only two inches between them. Os uteri admits only one finger. Membranes intact. Labour had been going on for at least 7 hours severely before entering hospital, the pains being at five minute intervals. On consultation it was decided that the only chance for the child and the best for the mother was section. It was explained to her and she consented. Operation was performed without difficulty, and a child 5 lbs 14 oz. was delivered. During the operation the pulse rose to 120, and although she rallied after operation she gradually sank and died from heart failure on the third day. A post mortem showed abdominal conditions to be perfect. It was undoubtedly death from shock acting on an already poor bodily and mental condition. Child was healthy and survived.

Case 3, No. 3,069, Mrs. S., aet. 28, para. 1. Admitted in the 8th month of pregnancy.

General history.—She had mitral and aortic regurgitant murmurs for some years—probably following a severe attack of scarlet fever.

Family history.—Nothing of note.

Present condition.—Genito-urinary system, nil.

Respiratory system.—Great shortness of breath. On examination, chest shows dulness over base of both lungs—on right side being 3½ in., left side 2½ in. and is rapidly increasing, moist rales present in both lungs. Patient unable to breath in recumbent position. Respiration 40 per minute.

Circulatory system.—Mitral and aortic regurgitant murmurs. Area of heart dulness slightly increased. Pulse varies from 120 to 140, weak. Compensation failing rapidly.

General system.—The patient is a healthy looking, well developed woman in appearance, average amount of sub-cutaneous fat. On consultation we felt only one course was open to us, as we had tried every means of supporting the heart and failed, and that was to empty the uterus. As the cervix was very long and only admitted the tip of the index finger and the condition of patient was getting rapidly worse, we considered that the most rapid and least injurious method of relief was section, which was proposed and accepted. Anæsthetic used was pure cholorform alternating with oxygen. Operation was completed entirely in 45 minutes. It was most interesting to notice the prompt and great relief instantly obtained when the uterus was emptied. In this case the most interesting part was the first ten days after operation. It was a continuous and determined fight for life. Oxygen was used in large quantities, adrenalin, strychine, and all the ordinary and extraordinary heart stimulants. Of all the remedies used beside oxygen, I found that three grains of powdered digitalis leaf given twice daily for four or five doses, produced by far the best effect, bringing down the rate of the pulse and increasing its volume markedly, and patient left the hospital walking down stairs on the 31st day after section. The child was only 8 months in utero and had, I believe, suffered very much from the mother's condition before section. It died on the twenty-third day.

Case 4, No. 3,085. Mrs. W., para. 2, aet. 33. Admitted in labour May 22nd, 1904.

As patient was operated on shortly after being admitted to the hospital, history is wanting.

Present condition.—Membranes broke May 18th, at full term she believes. On examination of vulva a mass 2½ in. long and 2 in. in diameter protruded, which was found to be the cervix uteri. On introducing the index finger it measures five inches to the well-marked internal os. No history could be obtained of the condition except that it came on slowly. She had no trouble with her first child. It was clearly a case of hypertrophic elongation of the cervix. As labor was in progress, the pains being ten minutes apart, we considered in consultation that we would not amputate the cervix nor dilate it, and that the only method of delivering patient safely was section, to which patient agreed. The tubes were not tied in this case, as patient was advised to have the operation later, with amputation of the cervix. The placenta was anteriorly implanted, child weighed 5 lbs. 11 oz. Time occupied by the operation 43 minutes. Patient made an uneventful recovery, leaving the hospital at the end of the month. In this case,

although the union of the skin was perfect at first, several silk sutures had to be removed later. The extreme thinness of the skin and the closeness of the silk knot to the surface I feel had something to do with their infection. On their removal the small sinus closed at once. In this case patient nursed her child, and both left the hospital in good condition. The patient was the only one not rendered sterile.

Case No. 5, No. 3,128. Mrs. D. Para. 2., aet. 33. Entered hospital August 11th, 1904, having been intermittently in labor for the past fortnight. Severe pains coming on every other night at 15 minute intervals, but now severe and ten minutes apart.

Personal history.—The only thing worth noting was the fact that her first labor was exceedingly severe. The child weighing 11 lbs., and labor lasted 27 hours. The last three hours she was unconscious from its severity, according to her account.

Family history.—Nil.

Respiratory, genito-urinary and circulatory systems normal.

Present condition. Patient a large, well nourished woman. There are large varicose veins on both legs, about vulva and inside the vulva and on vaginal wall. On examination os uteri dilated about the size of ten cent piece and seemed hard and to be formed of cicatricial tissue. Child calculated to be about eight lbs., and from its size and the local condition, and labor being so long on and no advance made, on consultation the question lay between an accouchement forcé or Cæsarean section. From the local condition of varices and cicatricial os, it was considered that section would be the least dangerous, and the woman desired to be rendered sterile, as she dreaded under these conditions to have children; the husband consenting, section was decided on. After opening the abdomen, the uterus was found to be too large to take out of the opening made, so it was opened in situ, and after the removal of the child the uterus was taken out of the abdomen and the usual procedure followed. The peritoneum was guarded against the discharge of uterus and blood by towels packed about it. Operation took one hour and five minutes. The tubes were tied in two places and cut between. Twenty skin sutures were used and removed on 9th day. Union was by first intention throughout, except at one spot where a deep suture had to be removed. No further trouble occured. Patient nursed her baby and left the hospital well on the 30th day, able to walk from her room to the cab at the door.

Case No. 6, No. 3,137. Mrs. T., para. 4., aet. 35. Admitted August 25th. 1904.

Family history.—Nil.

Respiratory, circulatory and genito-urinary systems normal.

Personal history. Patient is a small, delicate woman. Her first two confinements were exceedingly difficult forceps cases followed by post-partum hæmorrhage which nearly cost her her life. Last year on the advice of her physician in consultation with a specialist, it was decided that an abortion was called for. She was then 4½ months pregnant; she again nearly died and was a long time convalescing.

Present condition.—She was found to have contracted male pelvis internal conjugate 7.5 cm. (3 inches.) The position by palpation was diagnosed as a breech. Placenta implanted posteriorly child probably a male. Has had irregular pains for a week past. No dilatation of os or cervix. Patient and her husband desire to have section performed and that she be rendered sterile. August 26th, operation performed as described. Placenta found posteriorly; the membranes were so adherent that they were removed with difficulty and a distinct sound like tearing of adhesive plaster from the skin could be heard. After closing the wound a slight hæmorrhage occurred from the uterus, but a hot douche controlled it and there was no further difficulty with the case. Time of operation, one hour and eight minutes. A great deal of the time was taken up in approximating the skin carefully; child, a female, weighed 6 lbs. 4 oz. Biparietal diameter being 9.5 cm.

Such is the history of the six cases. Naturally the question arises what are the indications for this operation? Of late years a change has come over the profession in this special branch, with regard to the expediency of performing section, owing perhaps in a great degree to the good results obtained by modern asepsis. Conditions may be divided into absolute and relative.

Under absolute conditions calling for this operation, the mother and child being in good condition, are tumours which cannot be removed, preventing the descent of the child. Contracted pelves; here we find that almost every author varies somewhat between 7.62 cm. or 3 in. to 9 cm. or 3½ in. In a book it is easy to take what is given as the normal diameter of the child's head and say it should pass through an 8 cm. or even 9 cm. pelvis, but in my opinion one has to consider each case on its merits. To illustrate this; in a New York Maternity Hospital the average for children is 6½ lbs; in Montreal it is from one-sixth to one-third more and it is easy to see that although the head would not have the whole difference in it of weight, it would share proportionately, and make what in New York might possibly be a difficult forceps or version,

an impossible one here. I believe I have now under my care two cases where the child many years ago was delivered through a contracted pelvis with difficulty, and I believe that it injured the children's brains, as they are not quite right mentally in either case. I have always felt convinced that in bringing down a child by force through the brim we bring down considerable tissue at the same time, diminishing the conjugate. Williams, who is very practical, considers that after one hour of strong second stage pains if the head does not engage, section should be considered if mother and child are in good condition and aseptic precautions and a good operator are possible; that it is less likely to damage the mother and child than severe forceps or version. The Roman Catholic Church demands that if possible the child should be saved and this is almost always possible by section. Outside of the indications at the superior strait the bisischial diam. of 7 cm. or less may call for section. Placenta prævia when central with an undilated os and long conical cervix, would I believe be the best for woman, certainly for child, and generally for operator. Partial or lateral placenta prævia I think can be treated, as a rule, more easily by the old method; eclampsia gravidarum I do not believe is either an absolute or relative cause for section, as although quickly ending the labour the irritation of the section is more apt to set up convulsions post partum.

As to relative causes, such a case as No. 5 might be considered one. It would doubtless have been possible to deliver her safely, but under the circumstances I think I was justified. When one considers that under proper conditions the death rate of mother and child should be nil, it should not be considered the *dernier ressort* as it too often fatally is for both. Rapidity of operation also is held to be a very important factor towards success.

Much might be said regarding indication, but I have trespassed already too long on your time. I would say in conclusion that I had the hearty co-operation and assistance of Drs. Burnett and Thompson, my House Surgeon and nurses in all my cases which contributed greatly to their success.

An important addition to the doctor's library is promised by a new work on Obstetrics, by Dr. Adam H. Wright, Professor of Obstetrics in Toronto Medical College. It is announced to appear in April from the press of Morang & Co., Toronto.

COMBINED EMPYEMA OF THE LEFT FRONTAL AND ETHMOIDAL CAVITIES.

BY

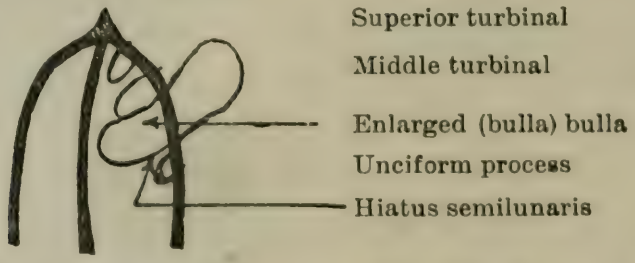
ROBERT H. CRAIG, M.D.,

Laryngologist, Western General Hospital, Montreal.

Mrs. B. C., a woman forty-five years of age, was referred to me by Dr. Spier for examination of the nose and throat.

The patient stated that she was suffering from intense pain in the forehead, localized chiefly over the left frontal region. The present illness began about ten years ago with severe headaches. The pain was very severe and of a neuralgic character and would last for hours, then gradually disappear, leaving a throbbing sensation in the head particularly over the frontal region. When the pain was most severe it was accompanied by attacks of vomiting. The vomiting would continue until the patient was so exhausted that she would fall asleep. The patient states that she was treated by several physicians for neuralgia of the face and head for a period of five years and was then referred to a special hospital clinic in this city where she was examined by an ophthalmic surgeon who stated that the pain was caused by diseased teeth. The teeth in the upper jaw were removed, and the patient experienced considerable relief from pain for one month following extraction. The headaches then recurred with greater intensity, and the pain was becoming so pronounced that she was afraid that she would lose her reason.

Examination revealed a fairly healthy woman. Her cardiac system showed mitral incompetency, no enlargement, compensation good. The other organs so far as could be ascertained were normal. Pressure over the left frontal bone and inner angle of the left eye caused excruciating pain. Examination of the nose disclosed a chronic rhinitis with pus in the left middle meatus, and an enlarged left middle turbinal bone, which was pressed outward by a dilated ethmoidal bulla, as shown roughly in the accompanying diagram.



Examination with electric light was positive both in the left infra-orbital and frontal regions, but negative as regards the antra, which was confirmed by exploratory puncture, after the nose had been thoroughly cleansed. I advised an immediate operation upon the ethmoidal and frontal cavities. The patient readily consented. On the 26th of Janu-

ary, 1904, after anæsthetizing the middle region of the left nostril thoroughly with a ten percent. solution of cocaine, I removed the anterior half of the left middle turbinal, and freely opened the ethmoidal bulla and anterior group of cells. Pus flowed freely. The cavity was curetted and flushed with an antiseptic solution. The bleeding, which was profuse, was controlled from time to time by the application of adrenalin chloride solution. The patient experienced considerable relief after the ethmoidal cells were opened, but, as pain was still present over the frontal cavity, and pus was still present in the middle meatus, I opened the frontal cavity a few days after the above operation. An incision was made in the left interfrontal furrow. The left frontal bone was exposed, and a small button of bone was removed by trephine, midway between the supra-orbital notch and the median line. Pus welled up out of the opening; the cavity was explored and the mucosa was found to be much thickened and covered with unhealthy granulation tissue. I curetted lightly, and washed out the cavity with 1 in 5000 bichloride solution and then swabbed with chloride of zinc, 40 grains to the ounce. Free communication was made into the nose by enlarging and curetting freely the naso-frontal duct. A wick of iodoform gauze was inserted in the large opening, and the external excision was closed, with the exception of its lower third, which was kept open by a small piece of gauze. The gauze was removed from the nose two days following the operation, and the frontal cavity and nose were flushed with an antiseptic solution daily. There was a free discharge for two weeks from the cavity, and at the end of that time, as I did not think the progress satisfactory, I enlarged the naso-frontal duct to ensure complete drainage. The discharge perceptibly decreased after this, and in a week the external opening was allowed to close by granulation. On February 26th, after a stay of one month in the hospital, the patient was discharged. Up to the present time there has been no recurrence of pus in the nose or pain in the head. The patient has gained in weight and enjoys good health.

With regard to the treatment of empyema of the frontal cavity it is advisable in all cases before resorting to the radical or external operation to establish as free drainage as possible between the nose and frontal cavity. This can be accomplished by the removal of all growths in the region of the hiatus semilunaris and naso-frontal duct. In the majority of cases excision of the anterior half of the middle turbinal is necessary to facilitate free drainage. If dependent drainage can be established through the nose, and the cavity freely irrigated, resolution sometimes occurs; on the other hand, in cases of long standing it is usually necessary to resort to the radical operation to effect a cure.

INJURIES TO THE HEAD AND FACE FROM FORCEPS WITH REPORT OF CASES FROM THE CLINIC OF THE MONTREAL FOUNDLING AND SICK BABY HOSPITAL.

BY

RIDLEY MACKENZIE, M.D.

Opportunity is seldom afforded to study pathologically the injuries inflicted by the use of forceps in labour. The difficulties met with in artificially rearing institution children, gives me the opportunity to show these specimens. The three cases I report came within a month of each other under my service at the Montreal Foundling and Sick Baby Hospital.

H. H., aged 8 days, weight on admittance 6 lbs. 8 1-2 oz.; poorly nourished. On the right side of the head between the parietal eminence and the centre line a large purplish swelling was seen, tense and not pulsating. On palpation one felt that the fractured edges of the skull could be made out. There were no signs of injury to the brain. The child did not thrive on artificial food and died after being in the hospital a fortnight.

Autopsy revealed the tumour to be an hæmatoma of the pericranium and a spoon-shaped fracture extending from the centre of ossification in the parietal bone to within half an inch of the sagittal suture; the fracture was a complete one but the duramater was not injured.

G. M., admitted one day old, weighing 7 lbs. 11 oz., and well nourished. The head presented two large hæmatomata just above the parietal eminences, the one on the right the larger. The child was artificially fed but lost weight and strength and died after being in the hospital twenty-six days. The tumours were firm and showed deep red under the scalp. On palpation it was difficult to differentiate between the edges of the hæmatoma, the sutures, and possible fractures, there were no evidences of brain lesions. At autopsy no fractures of the skull were found or injury to the brain. The pathological findings were pericranial hæmatoma, with softening of the bone.

The last case presented some additional features.

John Smith, not an unusual name for a foundling, admitted one day old and weighing 7 lbs. 9 1-2 oz.; he lived a fortnight. He presented a large tumour on the right side of the head, a good deal of swelling of the face and an injury to the skin over the left zygoma. The tumour presented the same conditions as the previous ones. A paralysis of the facial nerve developed with conjunctivitis and keratitis and wasting of the muscles of the face. At the autopsy the swelling was found to be a pericranial hæmatoma extending from the anterior fontanelle to within half an inch of the posterior fontanelle and from the centre of ossi-

fication on the right parietal of the sagittal suture, there was also an underlapping of the right parietal bone; there was no injury to the brain. The seventh nerve at its exit was flattened.

The injuries to the head and face usually met with from the use of forceps are: Intercranial effusions of blood; paralyses of the facial nerve; depression and fissure of the skull; pericranial hæmatoma; laceration of the scalp; injuries to the eyes, ears, nose and mouth. These cases present four of the above conditions, namely:—Paralyses of the facial nerve; depression and fracture of the skull; and pericranial hæmatoma.

On studying the etiology of these cases from the position of the injuries, one would think of the possibility of face presentations, but these are rare, 1-300; or posterior vertex positions with the use of short bladed forceps, or again high forceps operation before engagement. The heads were not large, the pelves may have been small and in the case of the fracture a good deal of compression of the head must have been used, more than the one-quarter to one-half inch allowed to be without danger. Slipping might bring about these hæmatomata, but there was very little if any injury to the scalp.

The treatment of these conditions would depend upon the diagnosis between hæmatoma, with or without fracture. To me it seems a difficult thing to determine, the margins of the hæmatoma becoming hard from the presence of coagulation in the tissues, suggesting fracture with depression. To favour absorption, cold and pressure should be applied, the latter is a difficult thing to do with infants. There was practically no absorption of the blood in these cases, the cachectic condition of the children being a factor in slow absorption. Cheyne and Burchard recommend if no absorption takes place within ten days puncture and drainage to prevent softening and absorption of the bone. This is shown in the last specimen where some slight absorption has taken place. The fracture would be left to itself and the injury to the facial nerve treated by protection to the eye, time and electricity.

HYDROSALPINX: CASE REPORT.

BY

F. A. L. LOCKHART, M.D., Montreal.

Female, single, 22 years old, entered ward "G" of the Montreal General Hospital on February 1st, 1905, complaining of weakness, vomiting after eating, and of her "stomach being sore all over." She has had the usual diseases of childhood and four years ago she had what she

Read before the Montreal Medico-Chirurgical Society, 17th February, 1905.

called "abscess in the womb," for which she was operated upon in the Hotel Dieu at Quebec. The operation was an abdominal section, there being at present a cicatrix in the median line just above the pubic bone, but the exact nature cannot be ascertained, as the authorities of the hospital can find no record of the case. The patient states, however, that she was ill for two months after the operation, that tube drainage was used, and that the wound was dressed every day. She has had some pain in the wound ever since, but it has never been sufficiently severe to make her stop work.

Her menstrual history is entirely negative except that she has had no period since the operation. She has never been pregnant. Three weeks before admission she was seized with pain in the abdomen, chilly sensations and vomiting after eating, being confined to her bed. The pain was severe and localised in the centre of the lower abdomen. The bowels

FRONT VIEW.

BACK VIEW.

were constipated during the attack, but they were always more or less so. She now for the first time felt a swelling in the lower abdomen. Four days before admission, she had another attack of pain and vomiting, which lasted until she entered the hospital.

Nothing abnormal could be observed in the alimentary, circulatory, nervous or respiratory systems, and temperature and respiration were normal. Examination of the abdomen revealed the presence of the above mentioned scar in the middle line just above the pubes, and on palpation a rounded firm mass could be felt just beneath the scar, but the latter was not adherent to it. The mass was not sensitive to pressure. Examination per vaginam revealed a profuse white

discharge. The cervix was represented by a small nodule at the top of the vagina and apparently connected with a semi-fluctuating mass the size of a cocoanut. This mass was mobile, non-sensitive, and felt much like an enlarged fundus uteri with thin walls.

The abdomen was opened in the line of the old cicatrix, but somewhat higher, on the third of February. The omentum was adherent to the cicatrix but was easily separated from it. The mass was then seen to be a large right sided hydrosalpinx attached to a firm, fibrous body, which felt like the remains of the uterine wall. There were no adhesions. This fibrous mass was divided across, in doing which a large vessel was cut and ligated, and the tumour removed entire. Attached to where one would look for the stump of the left tube was a small thin-walled cyst, the size of a walnut, which was removed. The pedicle of the larger tumour was now closed by a continuous catgut suture as after a panhysterectomy, the abdominal cavity was wiped dry and the incision closed in three layers as usual.

DESCRIPTION OF SPECIMEN.

The mass consisted of the right fallopian tube enormously distended with fluid. For the first 7.5 cm. it was but slightly enlarged measuring only about 5.75 cm. in circumference, but after that it became rather suddenly distended until it ultimately measured at its largest part 32 x 57 cm. The wall was exceedingly thin and tense.

The pedicle consisted of a firm fibrous mass, 6 cm. in length by 21 cm. in thickness. It contained a cavity from which a firm, yellowish-white mass was extruded. This mass under the microscope revealed no formed structure but was homogeneous, and the wall of the cavity contained nothing but fibrous tissue. The smaller cyst removed from the region of the left broad ligament was unilocular and, under the microscope, showed nothing but fibrous tissue.

JOHN HUNTER.

BY

W. W. CHIPMAN, M.D.

In September, of the year 1748, a young man of twenty, rode on horseback from his native Scotland up to London. He was short in figure, strongly built, his curling red hair covered a large head set close upon broad shoulders, and the wide grey eyes looked forward to the meeting with his older brother, to beginning the study of medicine, and all his world to conquer. Forty-five years later, in October of 1793, this same

man was carried reverently by his colleagues, in a sedan-chair, out of the portals of St. George's Hospital, London, to his home in Leicester Square, only now the tale of his life-time is told, the hair is white and the eyes are closed for ever. Thus began and thus ended the forty-five years of the working life of John Hunter, "the greatest man in the combined character of physiologist and surgeon that the whole annals of medicine can furnish."

It is always interesting to learn the genealogical facts associated with the production of a great man, or a family of great men, even though the sum total of these facts leaves us with a *result* altogether disproportionate. In a biological sense we know little of cause and effect, and it is not surprising that we cannot argue from the one to the other. The man of genius the *effect*, stands out the child often of commonplace parents, the cause, the one seems entirely inadequate to produce the other; and again inversely, the most promising marital unions are frequently the most niggard in results. There must be laws which govern propagation and inheritance, but as yet these are unrevealed, only do we know that in this great biological kingdom there is no oligarchy of genius, rather is it a republic, for does not Jack often propagate his species to higher uses than his master.

For example,—A laird, by name John Hunter, of a small freehold in Lanarkshire, marries Agnes Paul, the daughter of the Treasurer of Glasgow. The laird is in no way distinguished, is but frugal and upright, and his wife possesses a kind and lovable disposition; nevertheless as a result of that union there is given to the world of a family of ten children, the two famous sons, William and John, "who raised themselves to the highest positions in Science," and a daughter, Dorothea, who marrying James Baillie, an ordinary Professor of Divinity, gives birth in her turn to Dr. Matthew Baillie, for many years the first physician in London, and to Joanna Baillie the poetess, the "immortal Joanna" of Sir Walter Scott. In the words of Jonathan Hutchinson "it is doubtful whether the annals of biography can produce a more striking example of the production of what we may call *family-genius* than that which resulted from the union of John Hunter and Agnes Paul."

Such then was the family heritage of the great son, John Hunter. "Jockie," as he was called, was the youngest of the ten, younger than his brother William by ten years, and born when his father was 70 years of age. When in his turn he was ten his father died and he was left to the care of his mother, a somewhat unruly but affectionate boy, a truant

at school, fond only of games and out-of-door sports. His education was rather of a hap-hazard sort, he had no taste for study or books and at seventeen could scarcely read or write. As he afterwards said of himself, "I wanted to know all about the clouds and grasses, and why the leaves changed color in the autumn. I watched the ants, bees, birds, tadpoles and worms; I pestered people with questions about what nobody knew or cared anything about." When he was seventeen his mother in sheer desperation apprenticed him to his brother-in-law, one Buchanan, a cabinet maker in Glasgow. Here he remained three years, but beyond the acquisition of a certain manual dexterity he made nothing of it, and at the end of that time he returned home to his mother. John Hunter was now twenty years old and truly the years of his youth had been lean years and the future was dark and unpromising. But now there came an invitation from his brother William to join him in London, and so in September, 1748, he set out on horseback and his mother sees for the last time the freckled, smooth-shaven, strongly featured face, the short, square figure of her youngest born. John Hunter has gone to London, the days of idleness and irresolution are over, for he has begun to work.

This journey of John Hunter's to London was in an educational sense the return of the prodigal son, only instead of his father's house it was his older brother William, who welcomed and took him in. This brother had been a brilliant and diligent student from the first. Graduated in Arts from Glasgow University, he had spent three years as an apprentice in Medicine with Dr. Cullen, of Hamilton, who was afterwards to become the famous Edinburgh Professor. A partner in Cullen's country practice, he soon left him to spend a winter in Edinburgh under the great anatomist, Monro, and finally in 1741, seven years before the advent of John, he went up to London. Here by his skill, manual dexterity and brilliant abilities he rose rapidly, studying under various teachers, chiefly anatomy and surgery. His great ambition to become a teacher was realized, when, five years later, he succeeded William Sharpe, the St. Bartholomew surgeon, as a Lecturer in Surgery. This course of lectures he greatly extended and added thereto a course in anatomy.

Previous to this, anatomy in England had been taught almost entirely in an indirect and descriptive way, lecturers or readers being chosen by the Barber-Surgeons from among the ranks of the physicians to deliver an annual course of lectures in the Barber-Surgeons' Hall. These physicians were seldom or never practical dissectors, only were

they familiar with the Latin tongue and read in the works of Galen, Vesalius and Harvey. One cadaver was deemed sufficient for demonstrating all parts of the body, the lecturer quoted largely from these old texts and trusted mainly to their fanciful drawings and diagrams. Among these Physician-lecturers had been John Caius, the founder of Caius' College, Cambridge; Harvey, Glisson, Mead, Cooper and Willis. This Barber-Surgeon alliance which had controlled in England the practice of surgery for 200 years, a strong, close and jealous corporation, quite ready to impose a fine of £10 upon anyone dissecting a body outside their Hall, and both unable and unwilling to conduct these dissections within it, was very fortunately in this year 1745, finally dissolved. The time was critical in the teaching of anatomy, for there existed a universal horror of all anatomical pursuits and practical dissection was generally unknown. William Hunter seized the opportunity, advertised "to instruct gentlemen in the practical art of dissecting as it is taught in Paris," and despite a pious and professional hostility he succeeded at last in placing the teaching of anatomy upon a practical and scientific basis. His was the first school of the kind in England (the Monros in Scotland had slightly anticipated him), it grew rapidly in prosperity and soon became the first teaching centre in London.

It was at this school in Covent Garden, with its dissecting-room at the back, that John Hunter, the younger brother, arrived in that September of 1748. William's private practice had by this time greatly increased and chiefly in the direction of midwifery. He was soon to be known as the best anatomist and accoucheur in London, and afterwards in attending Queen Charlotte had the distinction of being the first male accoucheur employed by any of England's Queens. It was to relieve William in the work of the dissecting-room that "Jack" Hunter as he was now called, was put to work that morning in September upon the exposure of the muscles of the fore-arm, upon his life's work. The brothers are now together and for ten years they so continued, William delivering the greater part of the lectures, writing papers and busy with practice, while John, soon a skilled dissector, was mounting specimens, prosecuting the researches and teaching the hack-work of the dissecting-room.

Comparisons between these two brothers have been and will always be, inevitably instituted. How that William, though of great professional attainment, of sound education and wide, diversified tastes and the author of the monograph "Anatomy of the Gravid Uterus," the ablest work of its time, and sufficient alone to make him immortal, lacked the originality, the scientific insight and foresight of the younger brother

John, the "Founder of Scientific Surgery!" Compare them as we may we must always remember that William was the pioneer, that without him there would have been no John and that their respective work, shot each through and through with the influence and individuality of the other, and which truly does live after them, is monumental to them both, one and indivisible.

With the two brothers at work in Covent Garden let us place about them, very broadly drawn, the setting of their own time.

"Farmer" George was King of England, and among his Crown Ministers were Lords Grenville, Rockingham and North; Fox and the two Pitts. Peter the Great had been dead some few years and Charles the Pretender had already suffered defeat at Culloden. The history of the time includes the great earthquake at Lisbon; the Seven Years War with the French, with the incidents of the Black Hole of Calcutta, and the taking of Quebec by Wolfe; the winning of their Independence by the American Colonies and the beginning of the French Revolution. Louis XVI. perished on the scaffold six months before the death of John Hunter, and on the very day of Hunter's own tragic end there fell by the guillotine the head of his Queen, Marie Antoinette. Paré, the great French surgeon, the inventor of the ligature, had been dead nearly 200 years. Exactly a century before John Hunter was born, Francis Bacon died and Harvey published his great work on the Circulation of the Blood. Wiseman, the father of English surgery, and Sydenham were dead already some forty years, while Newton had lived till just a year before his birth. Voltaire was thirty years older than Hunter and Haller the indefatigable Professor at once of medicine, anatomy, botany and surgery in the University of Göttingen, was 20 years his senior. The renowned Boerhaave died at Leyden when Hunter was ten, and the year he came to London, Goethe was born. Of the great naturalists Grew and Ray belonged to the previous century, but there lived as contemporaries Buffon, Linnaeus and Cuvier.

Among those whom the Hunters possibly met in London were John Howard, Wesley and Wilberforce, Pope, Adam Smith, Benjamin Franklin, Cavendish and Davey, Dalton and Herschell, Grose, Sir Joshua Reynolds, Erasmus Darwin, Priestley and Benjamin West, and doubtless they occasionally saw the acting of David Garrick and Mrs. Siddons, while the link-boy and sedan-chair were still met in the streets.

Chief among the Hunters' professional brethren were the following:—Cheselden, the great and kindly surgeon of St. Thomas, who so successfully "cut for stone," adopting first the supra-pubic, and later the

lateral perineal operation, and by this latter method often cutting as many as 27 without a death. Percival Pott, surgeon at St. Bartholomew's, who already was protesting against the actual cautery and charcoal-pan, the suppuratives, digestives and sarcotics by which the older surgeons checked bleeding and dressed their wounds, using himself the more kindly ligature and bland and simple dressings. Not yet had he been thrown from his horse in Kent Street and suffered his famous fracture, while the "Treatise on Rupture," and his additions to surgical pathology in respect of "tumour albus" and vertebral caries, the resulting curvature from which still bears his name, were yet to appear. Among other surgeons Mr. Bromfield and Sir Cæsar Hawkins were at St. George's; Samuel Sharp and Warner at Guy's. Of the physicians were Heberden, John Fothergill, Radcliffe, Richard Mead, Lettsom and Thomas Dover; while Smellie the obstetrician, was busy perfecting from Palfyn's *tiré tête* his famous *midwifery forceps*.

The medical teaching of the time may be judged both in its quality and extent by the following:—Mr. Nourse, the chief surgeon of St. Bartholomew's and Pott's old master, professed to teach "totam rem anatomicam" in 23 lectures; Mr. Bromfield, a lecturer of note comprised anatomy and surgery in thirty-six, and Dr. Nicholls, at whose school William Hunter studied, taught anatomy, physiology and the general principles of pathology and midwifery in 39 lectures.

The professional and social gulf between the physicians and surgeons, digged in the Middle Ages, was still imperfectly bridged. The physicians were as a rule, better educated and still counted themselves greatly superior to the surgeons, for Charles Bernard, who is remarked as the first English surgeon who was an *educated* gentleman, had only died in 1711. Their college founded by Linacre, had already been in existence some 200 years and had during that time slowly gathered to itself the strength of custom and tradition. The physicians proper, the "medici puri" were still inclined to boast as their inheritance the profound gravity, the fur-trained robes, perukes, canes and swords affected by their predecessors, and the consideration that service other than a formal prescription was beneath their dignity.

The surgeons on the other hand, had not yet achieved a complete social emancipation. Throughout the Middle Ages their degradation had been greater than that of the physicians, for at that time, while the practice of medicine was a clerical right, the Church forbade, on pain of excommunication, the letting of blood. Consequently, surgery was shunned by the Ecclesiastics and fell into the hands of the ignorant and

vulgar,—the barber, the bather and bone-setter. The redemption of surgery from these vulgar hands was the work of nearly three centuries, and was not completely achieved in England till the dissolution of the Barber-Surgeon Company in 1745. The Court of Assistants of the Corporation of Surgeons was founded in Hunter's time, he was one of its first masters, and it was this corporation which in 1800 became by Royal Charter, England's College of Surgeons.

John Hunter lived in stimulating times, let us now see how worthy of his time he proved himself to be.

In William's school he began simply as a practical dissector and soon proved himself an adept at the business. Before the end of the year, so rapid was his progress, he was entrusted with the charge of directing the pupils in their dissections and of preparing the subects for his brother's lectures. He found himself in his element, and the mind which had recoiled with disgust from the dry routine of scholastic pursuits was aroused and attracted by the congenial objects which on all sides confronted him. His ambition was fired to become not only a surgeon but also an anatomist.

During the summer months he studied surgery, attending first the Chelsea Hospital under Cheselden, and later Saint Bartholomew's under Pott, and it was from these two men that Hunter received his first lessons in the surgeon's art. Within two years of his arrival in London he was fairly embarked upon his professional life. His industry and zeal were phenomenal and his capacity for work was enormous. A roughish sort was "Jack" Hunter, head-strong and intolerant, and a great favourite with the "resurrection men." His brother with his scholarly attributes and gentlemanly manners, was at this time his good and guiding genius and soon about the Covent Garden School and home were gathered the leading, professional and lay intellects of the day.

In 1753 John entered as Gentleman Commoner at St. Mary's Hall, Oxford, probably persuaded thereto by his brother, for his great deficiency in expressing himself both in speech and writing was painfully manifest. To the day of his death he never made entirely good this deficiency, for he could not stand it at Oxford, in his own words "to be stuffed with Latin and Greek and made an old woman of," and soon leaving it, finally relinquished all thought of a polite education.

The following year he was entered as surgeon's pupil at St. George's Hospital and two years later became house-surgeon at the hospital. a post equivalent to surgical registrar of our own day. At this time too, he was made partner in the school and a certain share of the lectures alloted him, but it was in the dissecting-room always that he felt himself

most at home. All his leisure time he devoted to anatomical research and to the preparation and collection of specimens. His reputation as a skilled anatomist became rapidly and widely known, and at this time he was only laying the foundation of his real work that was yet to come. In the words of Stephen Paget, "John Hunter went forward from human anatomy to all anatomy and physiology, and from these to medicine and surgery; from all of them to the profound study of life, alike in health and disease, in all structures, at all stages."

It was about this time that Hunter made his famous dissection of the human placenta. The story goes that Dr. Mackenzie, an assistant of Smellie's, had succeeded in injecting the arteries and veins of the uterus of a woman dead at term. Not being able to interpret what he saw he called in Hunter who succeeded in tracing these arteries and veins to their terminations in the sinuses of the decidua. In the evening he communicated these discoveries to his brother William, who extremely sceptical at first, was, on seeing the specimen, at once convinced. This, the first demonstration of the true nature of the maternal placenta gains always a melancholy interest from the fact that some twenty years later it was the occasion of the final quarrel and estrangement between the two great brothers.

Other researches made at Covent Garden were:—(1) The demonstration of the lachrymal ducts in man. (2) The demonstration of the tubuli seminiferi. (3) The discoveries relating to congenital hernia. (4) The discovery of the lymphatic absorbent system. These all were triumphs of John's wonderful skill, patience and ingenuity. While he worked, dissected and demonstrated, William taught and wrote. After the fashion of the times these writings were vituperative to a degree, for the Monros of Edinburgh and Percival Pott, were also in the field of discovery and many and bitter were the contentions to priority of the several claimants. In these disputes, charges of stupidity, falsehood and theft were common tender and always the Hunters proved themselves doughty opponents.

And now the over-work and close confinement told even upon the health of John Hunter and he was advised to go abroad, "having complaints in his breast which threatened to be consumptive." Through the influence of his brother he was appointed a staff-surgeon in the army, and England being as usual, at war, early in 1761 he sailed under Keppel for Belle Isle and saw active service with the fleet. The following year he followed the land campaign in Portugal being in all, two years out of England. This active service completely re-established his health, afforded him material for his great "Treatise on Gun-shot Wounds,"

and gave him many opportunities for physiological experiment and investigation.

We read from his own pen of his observations on the arrest of digestion by hibernation, that, "At Belleisle in the beginning of the winter 1761-62, I conveyed worms and pieces of meat down the throats of lizards, when they were going into winter quarters, keeping them afterwards in a cool place. On opening them at different periods I always found the substances which I had introduced, entire and free from alteration, sometimes they were in the stomach, at other times they had passed into the intestine and some of the lizards that were preserved alive voided them towards the spring, with but very little alteration in their structure." Such was one of a multitude of observations made at this time.

Hunter came back from the Peninsula in 1763, thirty-five years of age; his only income in the world his half-pay. His partnership with his brother dissolved, he settled in London as a surgeon and started practice in Golden Square. And it was an uphill fight. His manner was abrupt, often even coarse and repellent. Eminent surgeons possessed the field, and he was unknown save as a skilled anatomist, more anxious to dissect than to cure. Even in his own estimation practice was always of secondary importance, and throughout his life it was ever with reluctance that he laid aside for its sake his scientific pursuits. "Well I must go and earn this damned guinea or I shall be sure to need it to-morrow," fairly characterizes the true attitude of his mind. His progress at first was slow. To eke out an income he delivered private lectures on anatomy and operative surgery, but his pupils never numbered more than twenty. In his leisure hours, they must have been many in those early years, he renewed his studies in comparative anatomy, securing by hook or by crook, all animals of whatsoever kind. His house became a menagerie, overflowed utterly, till in the following year he secured two acres of land about two miles from London, near Brompton, at a place called Earl's Court. Here he built a small house and gathered together whatsoever beasts of the field and birds of the air he could buy, borrow or steal. He observed their habits, experimented with them and in the end dissected them, whether it was a 17-foot whale or O'Brien the Irish giant.

Hunter's income for the first eleven years of his practice never amounted to a £1,000, but in 1767 he was elected a Fellow of the Royal Society, and in the following year obtained the position of surgeon to St. George's Hospital, his old clinical school. This latter appointment while it brought a rapid increase of practice, entitled him to take

"house pupils" each apprenticed to him for five years at a fee of £500. Among the first of these pupils were Mr. Guy of Chichester, Dr. Physick of Philadelphia, and most famous of all, Edward Jenner. Soon after his appointment to St. George's he was made a member of the Corporation of Surgeons, he published his first book, a "Treatise on the Natural History of the Human Teeth," he married Miss Anne Home and moved from Golden Square to better quarters, his brother's former house, in Jermyn Street. Fortune had at last begun to smile upon him, for both his private practice and professional character were advancing fast.

The increase of his professional duties served only to stimulate him to further scientific investigation, he was always, at every spare moment, engaged in innumerable dissections, observations and experiments. His letters to his friends bristle with requests to procure for him all sorts of things, animate or inanimate, from lions to lizards, from porpoises to pigeon's eggs. Already he was making the beginning of his wonderful museum and all the best rooms in his house were soon choked to overflowing. A patron of his, Lady S., sent a specimen of a giraffe. He could not make room for it, "so in order that it might be in sight he cut off its legs and fixed it in the passage." His country home at Earl's Court resembled nothing so much as a modern Noah's Ark, with its buffaloes and bees, snakes, birds and a lion's den.

Hunter's day began at six in the morning. He worked in his dissecting-room till nine when he breakfasted, and from then till noon he saw patients. He then set forth for his hospital and private rounds and returned to dine at four, the fashionable dinner hour. After dinner he slept for an hour and the evenings were occupied in recording his cases and observations and preparing and delivering lectures, continuing this work till one or two o'clock in the morning. He allowed himself about four hours sleep and no relaxation of any kind save an evening stroll among his various animals at Earl's Court. Is it any wonder that his health at forty-five began to seriously fail, for it was then he suffered his first attack of angina.

He now at 43 began to publish the results of his investigations. It is rather characteristic of the type of man that of his first seven papers presented to the Royal Society, five of them dealt with questions in comparative anatomy or physiology, one in pathology and only one of the seven with *treatment*; and this may be taken to fairly represent the relative importance of the respective subjects in Hunter's mind.

In 1773 he gave his first course of lectures on the principles and practice of surgery, advertised in Hunter's own words, "to introduce so much of the animal economy as may be necessary to illustrate the

principles of those diseases which are the objects of surgery." These lectures magnificent in quality, and far in advance of the time as they undoubtedly were, were scarcely very popular for Hunter was not at his best as a teacher. He was nervous, diffident and rather awkward in speech. Still his diction at times must have been forcible enough judging from the preserved specimens of his description of a gun-shot wound, where the ball "went into the man's belly and hit his guts such a damned thump that they mortified." He trusted nothing to memory, simply read his lectures, hardly lifting his eyes from the pages, and we are told that before his opening lecture he often took to steady his nerves 30 drops of laudanum. But he was fearless and independent in the pursuit of truth. To opinions he attached no value whatever save they were firmly based on fact. His own beliefs he changed frequently observing that "I hope I grow wiser every year. And he attracted and counted among his students most of the eminent surgeons who succeeded him:—Home, Carlisle, Abernethy, Astley Cooper, Cline and Macartney, men all who determined the spirit of their time.

Hunter was now in the full swing of his work and like Swift he truly "tore through life;" his practice continued to grow, for when Pott died, a few years later, he became the foremost surgeon in London. But the steady resistless flow of researches never ceased. His museum grew by leaps and bounds as he continually endowed it with the results of his labors. Even the life-long friendship with Jenner was doubtless cemented by a community of scientific interest, for Hunter had small time for the ordinary amenities of life and his personal friends were few. To Jenner, sorely disappointed in a love affair, he writes, "Let her go, never mind her. I want you to get a hedgehog in the beginning of winter and weigh him, etc., etc." two succeeding sentences which must have meant a somewhat abrupt transition in the mind of Jenner. Yet it was to this "dear master" as he called him, that Jenner always turned for inspiration and assistance.

Hunter was now earning £6.000 a year and every penny that could be spared, he spent in adding to his collection and very often he was fain to borrow from his friends. His mind was like a bee, and he ransacked the world for all sorts of living and creeping things, plants and even minerals. One subject of investigation after another suggested itself and the extent and versatility of his researches may be judged from his mental output of one year: "A description of the situation of the Testis in the Fœtus with its descent into the Scrotum:" "Observations on the Glands situated between the Rectum and the Bladder, called the Vesiculæ Seminales;" "On the Structure of the Placenta;" "Some

Observations on Digestion;" "On a Secretion in the Crop of Breeding Pigeons for the Nourishment of their Young;" "On the Color of the Pigmentum Nigrum in different animals;" "The use of the Oblique Muscles;" "A Description of the Nerves which Supply the Organ of Smelling;" "A Description of Some Branches of the Fifth Pair of Nerves;"—were papers all published in the course of a year, not half a bad year's work.

"Even in his old age, full of suffering, over-worked, and close to death, he was yet writing to Africa for swallows, ostrich eggs, a camel, cuckoos, a young lion, bees, chameleons and any other beast or bird."

And now this passion for anatomy which had been the lode-star of their lives, was to be the occasion of a great and final quarrel between the two great brothers. The dispute arose over their counter-claims to the discovery of the Structure of the Placenta, the work done on Dr. Mackenzie's specimen some twenty years before. John was the aggressor and yet his claim appears the more righteous. The quarrel waxed bitter and was never repaired, for three years later William died, and though John ministered to him at the last, the brothers made their final separation, unreconciled. John had ten years yet to live.

The year of his brother's death he moved to a large house in Leicester Square and in connection therewith he built a museum and a lecture theatre, with dissecting-rooms adjoining. This, while it laid him under a further financial burden provided him with a suitable home for all his vast collection of preparations and specimens. Here at last these were housed, arranged and classified, for Hunter a veritable labor of love. This museum was the great labor of his life, the principal record of his deeds and opinions. In it he collected some 14,000 specimens, a vast store-house of preparations of anatomy, human and comparative, histology, physiology, morbid structure, plants and fossils. Hunter dissected at least 500 different species of animals, making, moreover, numerous repeated dissections of the same species, and many hundreds of plants. He added to these thousands of preparations in human anatomy and pathology, skulls of all nations; two thousand stuffed animals and three thousand fossils. He made preparations to display the distinctive characters of each animal, and left an enormous quantity of manuscript-description, drawings and notes. This museum has been aptly called Hunter's chiefest monument. His object was to illustrate the whole question of life, both in health and disease, and superhuman though the task, he succeeded. For it he suffered, slaved and sacrificed; he was always poor, for it cost him £70,000, and dying, its money value was the sole fortune he had to bequeath. Six years after his death Pitt was

providentially persuaded to buy this museum for the nation, and he paid for it £15,000 though he had scarce money wherewith to buy powder, and it was given in trust to the Royal College of Surgeons, where it still remains.

The last ten years of Hunter's life was one long martyrdom. He had suffered his first attack of angina two years before, but the seizures now recurred with pitiful frequency and he was scarcely or never entirely free from pain. In his own words "My life is in the hands of any rascal who chooses to annoy and tease me." If anything, his energy was redoubled, for during this time he planned and executed his great operation for aneurism, operating upon five cases; wrote some thirty original papers and published two of his large works, "The Treatise on the Venereal Disease," and "Observations on Certain Parts of the Animal Economy." He was engaged upon his great "Treatise on the Blood, Inflammation and Gun-shot Wounds," when the end came. In addition he was still lecturing, giving clinical instruction at the hospital and driven with private practice. A wonderful history it reads of a strong man's struggle against increasing disability; shattered, suffering, resolute. All treatment was useless, even that of Jenner's. Gradually sheer exhaustion shortened the excursion of his activities, but his great vitality held on. In better than his usual spirits he reached St. George's Hospital on that fateful 16th of October. The end came tragically. In the midst of a heated discussion an attack of angina seized him and he staggered from the board-room only to fall into the arms of two of his colleagues where he died.

Such was the passing of John Hunter, in 1793, at 65, the same age as William his brother. Two days later his body was quietly interred in the Church of St. Martin-in-the-fields.

"John Hunter was a profound philosopher, a great naturalist, a pre-eminent collector and the foremost surgeon of his time." He was the first who practised and taught surgery as a branch of the science of life, the first *scientific surgeon* and upon this his irresistible claim to greatness rests. Previous to his time surgery was merely an art, rules of observation and experience, isolated or but loosely linked together. Nothing was known of the real nature of disease, for even of the normal functions of nutrition and absorption, growth and repair, there was almost entire ignorance. Hunter perceived the want of this knowledge and clearly saw that it alone could furnish a sure foundation for the *healing art.* In Ottley's somewhat quaint phraseology "Hunter was the first to realize that in order to obtain just conceptions of the nature of those aberrations from healthy action, which constitute disease, it was

necessary to understand the healthy actions themselves, and these not in man alone but throughout the whole animal series and even in vegetable life." His was no less an undertaking than the study of the phenomena of life, in health and disease, throughout the whole range of organized beings, and to this study he devoted the almost superhuman energies of his life. There had been none like him in scientific zoology since Aristotle, for through the long twenty centuries, as students of natural history there were none equal to these two;—the one the son of the Stagira physician, the other of the Calderwood laird. So Hunter was able to transform surgery from a barren account of isolated cases into a science founded on anatomical, physiological and pathological knowledge. He carries us beyond mere handicraft into the region of general principles. "The Surgery of the Middle Ages was a trade. Pare, Petit and Pott converted it into an art. Hunter elevated it to the rank of a science."

His loftiest efforts are to be found in his work on "The Blood, Inflammation and Gun-shot Wounds," which may be fairly counted his masterpiece, for in it there is foreshadowed, upon the principles therein enunciated, is based, the whole subsequent progress of scientific surgery. Much of it makes almost inspired reading so faithfully have its promises been fulfilled.

His "Treatise on the Venereal Disease," though impaired in its scientific value by his belief that gonorrhea, soft chancre and syphilis were due to one and the same virus is full of painstaking research, accurate observation and sound treatment. We can scarcely wonder at Hunter's error for when experimenting in 1767 with some pus which he thought gonorrheal he accidentally inoculated himself therewith. A hard chancre and secondary syphilis developed, which he faithfully treated with mercury, and he tells us "the time the experiment took up from the first insertion to the complete cure was about three years." In the treatment of urethral stricture he advises that the common bougies of lead or wax candle be discarded, and there be substituted his own bougies of hard rubber. His classic description of chancre,—the Hunterian chancre, stands to-day adequate, as it left his pen.

His "Animal Economy" embraces 47 original articles, chiefly in anatomy and physiology. Verily it is a marvellous collection of unique range, for in it are found observations on Fossil Bones, on Digestion, on Bees, on Whales and Kangaroos, with experiments on the Growth of Bones and the Absorption by Veins.

As an operating surgeon, Hunter was not the equal of Cheselden or Pott, but he was bold, steady and accurate. In this connection, with his

name are always associated:—Aneurism and its Treatment by Proximal Ligature, Phlebitis, Intussusception, Treatment of Gun-shot Wounds; Feeding through a Stomach Tube, and the Transplantation of Teeth; while his phrase "healing by first intention," will forever remain in our surgical literature.

These very shortly were some of Hunter's contributions to surgery, and the ensuing years have but enchanced their value and importance. Lawrence has written that, "we could well spare the works of any surgeon except Hunter, for they would hardly be missed. But if Hunter's researches and his writings were obliterated and their influence withdrawn, the very life-blood of surgery would be lost, it would be a body from which the vital principle had departed."

"Let no man presume to call himself wise," says Pythagoras, "God alone is wise. Man can never get beyond the passion for wisdom." It was this *passion for wisdom* that filled the soul and inspired the life of John Hunter.

Sixty-six years after his death, the body of John Hunter was removed from St. Martin, to the Abbey that "makes us we." He lies there in the North Aisle and above is written "The Royal College of Surgeons of England has placed this tablet over the grave of Hunter to record its admiration of his genius as a gifted interpreter of the divine power and wisdom at work in the law of organic life, and its grateful veneration for his services to mankind as the *Founder of Scientific Surgery.*

A new company, under the name of the Chandler and Mills, has been formed to deal in physicians' and surgeons' supplies. Amongst the shareholders are forty physicians of Montreal and the province.

It is understood that the appointments of Dr. Geo. H. Parke as Principal Medical Officer of the Quebec District, and of Dr. Geo. Turcot as Surgeon for the Quebec Arsenal, will be gazetted in the course of a few days.

Billroth, in writing to a Russian surgeon regarding the fatal malady of Pirogoff, a palatal neoplasm, refused to operate or to advise an operation, saying:—"I am not that bold operator whom you knew years ago in Zürich. Before deciding on the necessity for an operation I always propose to myself this question: 'Would you permit such an operation as you intend performing on your patient to be done on yourself?' Years and experience bring in their train a certain degree of hesitancy (Zurückhaltung)."

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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VOL. XXXIV. APRIL, 1905. NO. 4.

McGILL AND BISHOP'S.

It would be too transparent an affectation of ignorance to pretend any longer that we were unaware of the negotiations which have been in progress this past year for a merging of the Medical Faculty of the University of Bishop's College into the Medical Faculty of McGill. We are informed that the arrangement is as good as completed, though the exact nature of the agreement has not yet been disclosed. There is reason, however, to believe that it is one which will deserve the enthusiastic approval of the faculties, graduates and students of both Universities.

The Medical Faculty of Bishop's College was founded nearly thirty-four years ago, and during that time it has well served the cause of medical education by the practical training which it gave to its students, and by the experience which it yielded to teachers who were

afterwards called to a wider field. The high standing which many of its graduates have obtained in the profession, and its professors who have passed into other faculties may be put forward in proof of this. For example, five of the present professors in McGill and six junior teachers obtained their first experience in Bishop's. The graduates who have attained to distinction would be long to name.

But in these years the circumstances of medical education have changed. In the old days, all which was considered necessary for making a complete physician was a lecture-room and a few bodies for dissection. It is unnecessary to specify here the requirements which are essential to-day, but during the past few years the Faculty of Bishop's College have been reminded continually of them. Finally they were obliged to face the difficulty, through the resignation of their Dean, Dr. F. W. Campbell, on account of illness, increasing age, and other matters personal to himself. They were compelled to take note of the comparative inefficiency of the small school and the modern tendency of schools to come together; of the diminishing English-speaking population in the Province of Quebec; of the increasing demands of medical students for a wider knowledge; of the rivalry of schools in neighboring cities; of the increasing demands of life which prevent practitioners from engaging largely in other occupations than that out of which their livelihood comes.

These circumstances became more pressing, when they reflected upon their small endowments, their inconsiderable laboratory equipment, the lack of clinical faculties directly controlled by themselves, the continuous depletion of their number by promotion to wider fields. On the other hand, they perceived that if the medical school were absorbed into a larger body, certain definite advantages could accrue; namely, relief to the teachers from work which could be as effectually done elsewhere; an obliteration of the division in the profession, which always results from the presence of two schools, where one would serve; a more complete union of the English-speaking part of the profession, which would in time lead to a better understanding in the profession as a whole.

Accordingly a conference was sought with McGill Medical Faculty, when the whole matter had a full and frank discussion, and both parties proved that they were actuated by the same desire, to make medical education easy—where once it had been difficult. The two Universities gave cordial assent to the proposal which had been agreed upon by the respective faculties, and we understand they are now engaged upon the details of the scheme which, after all is a University matter.

It is altogether likely that there were many difficulties to be overcome

of which we have not heard, arising out of sentiment and out of fact, and the negotiations must have been cleverly handled in order to reach so desirable an issue. But, in truth, the trend of events favoured. Many members of the Faculty of Bishop's are graduates of McGill, and many members of the Faculty of McGill were once teachers in Bishop's. Their lines, social and professional ran together at several points, and it was easier to come wholly together than to remain apart. There are also other evidences of this better spirit. The united banquet of the French and English members of the profession and the merging of the *Canadian Medical Record* with this JOURNAL are cases in point.

We have not yet been informed as to the exact details of the agreement; yet, without being wiser than the matter demands, we may surmise that the University of Bishop's College will surrender its rights to teach medicine in Montreal for a term of years if not permanently; that all their students will be accepted *ad eundem gradum* by McGill; that they will in future pay the same fees as are now exacted; that all the property now held by Bishop's, endowments and moveable property, shall be taken over at a valuation, and that all leases shall be respected. Having in view that a union of hearts, is as essential as the merging of more palpable interests, we understand that arrangements have been made for doing just honour to the late Dean of Bishop's, for conferring McGill degrees upon the members of the Faculty, who do not possess them, upon such graduates as shall be agreed upon, and for incorporating the names of all the graduates into the McGill Calendar.

We are not altogether clear as to the question of appointments which may be made to McGill, but we understand that the members of the staff of Bishop's College would not agree to accept positions as a necessary result of the union, claiming that any such appointments should be made as required, and entirely on the ground of efficiency. If this be so, it is taking extremely high ground, and, we think, a correct position. An appointment as part of a "deal" is no compliment, and might not be satisfactory to either side. As a matter of course, hospital appointments continue to rest with the hospital authorities and not with the faculties.

Bishop's College has in a sense passed a self-denying ordinance, a term Dr. Osler employed in his memorable address before the united Toronto schools. Indeed we are not quite sure that the present negotiations did not arise from that suggestion. If this is in some degree self-sacrifice, it is worth keeping in mind that no sacrifice is ever in vain, and the present Faculty of Bishop's College is likely to be remem-

bered as a body of men who subordinated personal interests to the general good.

There is one matter which yet remains for consideration, namely the representation upon the Council of the College of Physicians and Surgeons. At present McGill and Bishop's each send two members. Without an independent Faculty of Medicine in Bishop's University, a strict interpretation of the law might reduce that representation from the English-speaking schools to two, but we feel that the legislature can be trusted to follow the course which justice and reason would indicate.

THE ALEXANDRA HOSPITAL.

Time brings its revenges, and Montreal instead of hanging its head over the Civic Hospital and the great lack of equipment with which to combat infectious diseases is likely in the near future to grow too proud in this regard, for the Alexandra Hospital has now been born, and we wish it a speedy growth and a long life. Thanks to the consistent work of a few determined individuals, the building and equipment is to be on a scale commensurate with the importance of the city; and it is here emphasized that the public has not only to "point with pride," but it has to support by a liberal response the claims of the Alexandra Hospital; lest it should not be remembered, subscriptions will be gladly acknowledged by Mr. E. S. Clouston of the Bank of Montreal, or Mr. T. A. Barton, secretary of the Alexandra Hospital, 16 St. Sacrament street.

The hospital will accomodate 125 patients, and in case of epidemic 187 can be cared for; the total cost will be about a quarter of a million dollars. The contracts have been awarded and work has begun; the site is a lot with nearly 500 feet street frontage, at Point St. Charles, on the river bank; half a mile above the Victoria Bridge; if one may judge by the published details of buildings, the plans provide excellently for isolated pavilions of modern construction, which will be fireproof: concrete, steel, terra-cotta, brick and stone, are the materials to be used. The buildings will consist of five pavilions, grouped like the points of a pentagon, connected, not with one another, but each with the centre, which again is connected with the administration building; of the five pavilions, two small ones are for observation of cases and for erysipelas, and the three main ones will be devoted to diphtheria, measles and scarlet fever. At one side of the lot will be a small building consisting of chapel, mortuary and ambulance quarters. The floor will be "monolithic," the walls and ceilings of hard plaster, enamelled, and the wood necessary for sashes and doors will be of minimum quantity, and without

mouldings or any inequality of surface that might prove a lodging place for germs. The mode of preventing infection spreading from one pavilion to another, is by the use of fresh air cut-offs at the entrance of each building; the diphtheria ward is to be equipped with an operating room for surgical emergencies arising from the disease. Situated apart from the hospital proper is the power house with the laundries, which are separate for staff and patients, and steam and formaldehyde sterilizing plants; steam heating, electric lighting, and mechanical ventilation, need scarcely be mentioned as adjuncts of so modern a hospital. We feel grateful that so much has at last been done, and when the hospital is built and opened, we shall congratulate from our very hearts not only the movers in this matter, not only the contributors to its funds, but everyone who may come within its sphere of influence, even in the capacity of patient.

THE HARVARD CANCER COMMISSION.

The third report of the Caroline Brewer Croft Cancer Commission of Harvard Medical School, fills a number of the Journal of Medical Research, and consists of four papers, three of which have very practical bearing upon the investigations of cancer. Greenough, speaking of the cell inclusions of cancer, points out that they are a product of gland cancers, not of epitheliomata or sarcomata, and that they are really vacuoles which are connected with cell secretion; similar vacuoles are found in some non-cancerous diseases of the mammary gland; and, if the gland lumen be lost, as occurs in cancer, these secretion vacuoles cannot escape and they still further degenerate; finally the author once more reiterates that no reason exists for the interpretation of these appearances as of parasitic origin.

Vose and Howe have examined the effects of the Röntgen Ray upon cancer, and state that it causes a degeneration not histologically distinct from degenerations from other causes, and that the only cure by the X-Ray is by destruction and exfoliation, which limits its value to superficial cases; they consider that the destructive process is too slow, and that, the rays being non-selective, they cannot be used strongly enough to effect destruction of any but the shallowest tumors. If the rays be used so strongly as to destroy deep-lying cancer, they will cause burns which probably will never heal.

The third paper is by Nichols, upon Tissue and its Relation to Cancer; he points out that epidermal transplantation occurs, but never glandular; that the fœtal tissues have greater potentialites of growth than have the

adult, that no transplanted issues infiltrate or form metastasses, than connective tissues, such as fœtal cartilage, can also be transplanted, and that when the tissue is transplanted, it does not reproduce the stage of development it had when transplanted, but goes on to its ultimate development, as it would have done if never removed. In all the conclusions of the three papers there are many points which are not at all new, but restatement of an old fact from a slightly different standpoint, is useful, and the Harvard Commission is doing its brave share of the work of the cancer problem.

THE TUBERCULOSIS ASSOCIATION.

The annual meeting of the Dominion Association for the Prevention of Tuberculosis, was held at Ottawa on March 15th, under the patronage of His Excellency the Governor-General, Senator Edwards being in the chair. The annual address was delivered by Professor Adami of Montreal, upon "Adaptation and Tuberculosis;" it was a thoughtful paper, and a thought compelling one in many ways, and will appear in the columns of this JOURNAL. Professor Adami in concluding, strongly urged the beginning of a campaign against the disease in cattle on Prince Edward Island, where absolute segregation and inspection is possible at a moderate cost, with the application of this procedure later to the entire country, a province at a time; certainly it would seem that effectual means in one part would far outweigh ineffectual means in all parts, if we are looking to the time when the disease will be completely eradicated.

A very encouraging feature of the meeting was the speech of Earl Grey, who delivered an address which was marked by a degree of enthusiasm and chiefly by a depth of knowledge of the subject which was, to speak frankly, a great and pleasant surprise to his auditors. His Majesty's representative is not at all times expected to have a thorough knowledge of the technicalities of such subjects as this, but evidently Earl Grey has appreciated the importance of the disease to the interests of the country, and has given careful study to the question. A general impression existed at the meeting that the House had done well to support the motion of Mr. Perley (Argenteuil), that the time had arrived for the Dominion Government to take action, in some way to assist the fight against tuberculosis; the Dominion is perhaps prevented by law from building sanatoria of its own, but it can at least assist provincial efforts in this direction, and even institute other methods in parallel lines.

We extend our heartiest congratulations to Professor Adami on the occasion of his election to be a Fellow of the Royal Society, and his thereby reaching a well-recognized milestone on the road to scientific fame. It is admitted that this title is a recognition of a definite and high position in the world of science, and it is a title, too, that is essentially an individual one, so that while we congratulate the university, it is with the full recognition that this honor has fallen to Professor Adami by virtue of merit, and is the product of his own energy. We believe we are correct in saying that Dr. Bell of Ottawa, is the only other Fellow of the Royal Society in Canada, who has a medical degree; and in view of the small number of Fellowships granted in medicine, and the great number of famous physicians and physiologists, we feel that this distinction is an unusually high one.

A well-merited honor was bestowed by the Governors of McGill University, in raising to the position of Professor Emeritus, Dr. Duncan McEachran, who was for many years professor of veterinary medicine and surgery, and dean in the faculty of comparative medicine and veterinary science. Apart from long, painstaking and zealous service to the university, Dr. McEachran's position in the veterinary world of Canada has been among the highest, and his services to the Government in the matter of cattle inspection and the prevention of disease, are too well known to require mention. Dr. McEachran has been a Fellow of the Royal College of Veterinary Surgeons of England for thirty years, and we wish him as long an enjoyment of his last honor.

Dr. Hunter, in the March number of the *Canadian Journal of Medicine and Surgery*, makes the following statement: We cannot look to our medical press, either, for effective work in a crisis. It is under a blighting influence, too, though not the same as that which emasculates the Medical Council. Through the niggardliness or indifference of the great mass of medical men, the medical press is not properly supported, and therefore it has to depend on the advertising columns of the big proprietary medicine houses. For a potent medical press, we must look to the profession at large for substantial support, as well as for a free expression of its opinion." This view of Dr. Hunter, we take the liberty of saying is erroneous, and arises from a shortness of vision which does not extend beyond his local environment.

The following item suggests that an orchestra may be in future a part of every operating room: "The strangest use to which music can

be put is to stop the flow of blood from a wound. An army doctor noticed that when a wounded soldier was taken to within an easy hearing distance from music, hæmorrhage was greatly relieved.....It is now believed that the vibration of the air produced by the music causes the patient to become faint....." It is probable that this occurred in Germany, if ones own experience of the German band be allowed as evidence.

The University of Paris has established a new department for the dissemination of practical and scientific knowledge. At first sight this seems a large matter, but it is, in reality, an office to give information regarding college courses and hospital clinics to outsiders desirous of using the facilities of the university.

The necessity for medical inspection of schools is shown by the fact that in one year five and a half per cent. of the children examined in New York were excluded, while a slightly higher percentage was rejected at Chicago in the same period.

Dr. Hyde, of Chicago, in the March number of the *American Journal of Medical Sciences*, blames the St. Louis Fair for an increasing prevalence of the itch. The directors probably failed to think of this in time.

On March 17th, Manuel Garcia celebrated his 100th anniversary, and through Dr. H. S. Birkett, the congratulations of McGill University were sent to him on the happy occasion.

THE RESIGNATION OF DEAN CAMPBELL.

It is with much regret that we learn of the resignation of Dr. Francis Wayland Campbell as Dean of the Medical Faculty of Bishop's College, owing to ill health.

The history of Dr. Campbell's connexion with Bishop's College takes us back to the birth of the Faculty in March, 1871, when he was appointed the first Registrar of the Faculty, and Professor of the Institutes of Medicine. Five of the twelve original members composing the Faculty are alive and are to-day enjoying lucrative practices and standing high in the profession in Montreal. Dr. Campbell filled the chair of physiology for ten years and on the death of Dr. David, the first Dean of the Faculty, in 1883, he was elected Professor of Medicine and Dean of the Faculty, and well and faithfully has he served his University in this

capacity. Quick in grasping the details of a problem, logical in argument, prompt and business-like in all appointments, and combining great foresight and optimism, he has been a strength to the school. A practical man himself in all things, it is natural that the school should excel in practical teaching, and this has always been the attractive feature in the course at Bishop's College.

At the inception of the Faculty, Dr. Campbell with the other professors received the degree of M.A., *honoris causa*, from the University at Lennoxville, and in 1895 he was honored with the degree of D.C.L.

Many practitioners will remember Dr. Campbell best as Secretary of the College of Physicians and Surgeons of the Province of Quebec, which post he held for ten years; and many of these practitioners are grateful in pointing to him as the one whose wise councils enabled them to propitiate the conflicting laws and regulations barring applicants from admission to the practice of medicine in the Province of Quebec.

Medical journalism always proved attractive to Dr. Campbell. He was one of the editors of the *Canada Medical Journal* from 1864 to 1872, when he established the *Canada Medical Record* and remained its editor for many years.

Dr. Campbell is an enthusiast in all matters military. For over 43 years he was actively connected with the Militia of Canada, rising from private to the rank of Surgeon-Lieut.-Colonel, the highest rank obtainable. The *Montreal Gazette*, of December 10th, 1898, in giving notice of his retirement, well said that "the history of Dr. Campbell's career "is the history, one might say, of the local militia. There have been "few if any events of interest that have occurred to the soldiers of "Montreal in which he has not played a prominent part, and one can "only view his retirement with extreme regret."

And so it is with the history of Bishop's College. The history of Dr. Campbell's energy and effort is the history of the success of the Medical Faculty of Bishop's College; and gratifying it must be to him to look about in the field of medical learning and note the height to which many of his old students have attained, and recall the days when they sat before him.

We are sure that many a graduate abroad and at home will sympathize with the Faculty in their loss, and will hope that the rest and relaxation from his long-present burden of leadership will restore to him that health and well-being so faithfully and so richly earned.

DR. FRANCIS WAYLAND CAMPBELL,

Dean of the Medical Faculty of Bishop's College.

Reviews and Notices of Books.

Diseases of the Liver, Gall Bladder and Bile Ducts.—By H. D. Rolleston, M.A., M.D., (Cantab) F.R.C.P., Physician to St. George's Hospital, London, Philadelphia, New York, London. W. B. Saunders & Co., 1905. J. A. Carveth Co., Toronto.

Although differing in method of approach and treatment of the subject, this volume of Dr. Rolleston's is assured of taking the position as the standard authoritative work of reference in our language on the subject of the liver and its diseases, held for so many years by Murchison The times are changed, and whereas Murchison in the sixties could with advantage, largely base his presentation of the subject upon personal experience, since then so detailed has been the study of individual conditions of disease, so wide a field has been opened for observation and experiment, that to-day no one man can pretend by personal observation to cover a tithe of the ground. To compress all the necessary matter into the limits of a single volume there can be no leisurely writing about and around each condition discussed: the treatment has to be direct, the abundant work of other observers has to be duly recorded, and success or failure depends on the way in which the work of others is abstracted, balanced and sifted, and given its proper place and value. When we recognize the conscientious way in which Rolleston has performed this part of his task, and observe the results obtained, we are not surprised that the volume is the outcome of no less than twelve years of steady work. By this we do not mean to indicate that the work is in any sense a mere compilation; on the contrary almost every page shows the fruit of the author's own experience, by his constant reference to cases seen and studied at St. George's; the treatment is individual to a very high degree; but the value of the work lies almost equally in the honest presentation of the other results of other observers. As Dr. Rolleston states in his introduction, the literature of the subject is enormous, and though he has omitted to insert full bibliographies at the end of each chapter, the reference to individual articles consulted and quoted, given at the foot of each page, must upon rough calculation be considerably over three thousand. There must of course, be omissions—an occasional valuable paper must be overlooked; that by Palmer Howard on Cirrhosis in Children is not mentioned, though it may be said to be included in Musser's later work; but how thorough the study has been may be suggested by the statement that we have counted no less than fifty-eight reference to work emanating from Canada—to the writings of Graham and McPhedran from Toronto, of Lafleur, Ross, Osler (before he migrated), Adami, Nicholls, M. E. Abbott, Ford, Gillies and Klotz from

Montreal, not a little of which has appeared in the pages of this JOURNAL. Justice we are glad to note has also been done to the French literature on the subject. For long years French workers have paid special attention to the liver, and have been indeed pioneers in certain directions, and as their results do not in general receive adequate attention in the German writings, to which hitherto we have been accustomed to turn for fuller study, it is well that they are here treated with the respect they deserve. Italian literature has also contributed its due quota. We would only add that written as the work is by a physician, no attempt is made to discuss the surgery of the liver and bile passage although the surgeon will find that the etiology and symptomology of the conditions which must interest him: cholelithiasis, cholecystitis, hepatic abscess, etc., come in for thorough treatment.

The various forms of cirrhosis are discussed with great care. We have here, in short, the best and fullest study of these conditions with which we are acquainted in any language. Next to this the condition of jaundice and of hepatic tumours are the most important sections, and the syphilitic affections of the organ are treated in a masterly manner.

The only section that appears to us unsatisfactory is that on the fatty liver. It is true that Rosenfeld's observations upon the nature of "fatty degeneration," so called, have severely shaken up the old accepted views regarding this form of fatty liver. We think, nevertheless, that it would have been well to differentiate more clearly than has been done between the almost physiological infiltration of the healthy cell, the cell, that is, with deeply staining and healthy looking nucleus, and the degenerative infiltration, in which the nuclear change alone is sufficient to indicate that the cell is greatly damaged. Dr. Rolleston's difficulty appears to arise from doubt as to where to place the alcoholic and tuberculous fatty livers. While, as in chloroform poisoning, there may in acute alcoholism be developed a true "fatty degeneration," closely resembling that seen in phosphorus poisoning—i.e., the cells containing a mass of fat droplets of various sizes, some distinctly large—in ordinary chronic alcholism the condition is one of pure fatty infiltration. We have no satisfactory indications, that is, that in small amounts, alcohol acts as a protoplasmic poison to the liver, although it obviously does so in large amounts; the appearance in chronic alcoholism are merely those of excessive storage of fat. In tuberculosis,—though here we speak with more diffidence,—the same would seem to be true. Judging by the nuclei the liver cells are not in a degenerative condition. We must suppose that, as in starvation, the tissues in general, undergoing emaciation, give up their fat, which then is found in increased amounts in the

blood (Schlutz) and so passes to the liver; so the progressive emaciation characteristic of tuberculosis leads to a giving up of these fats by the other tissues with resultant storage of the same in the liver.

With so much that is still debatable it is natural and inevitable that while welcoming and appreciating Dr. Rolleston's work we find ourselves here and there at loggerheads with him. The interesting fact is that so far in almost every case in which we differ, the author appears to have foreseen our point of view and to have supplied arguments—and in general strong arguments—in favour of his contention. Thus to take more particularly work emanating from Montreal he evidently accepts grudgingly the existence of obstructive biliary cirrhosis. He points out that no less than seven of Ford's series of cases are those of congenital obliteration of the common bile duct, and as regards these he accepts Thomson's view that the obliteration is secondary to a descending cholangitis, and it is to this, rather than to the obstruction *per se*, that he would ascribe the cirrhosis. He points out further that the frequent enlarged spleen in these cases indicates also that an infective condition is the essential feature. We are compelled to agree with him very largely. And yet on further consideration we would ask, what is the cause of the jaundice in all cases of cholangitis if not a coincident obstruction of the bile passages? We are of opinion that in all cases of obstruction, whether infective, or not, there is, through pressure in the bile passages a resorption of the already excreted bile and that it is this resorbed bile which, in extreme cases, causes actual necrosis of the liver cells and, in milder cases, sets up an irritation around the bile ducts leading to the overgrowth of connective tissue and biliary cirrhosis. The condition, we would urge, is parallel to what has been experimentally determined in the pancreas; there a moderate grade of obstruction leads to fibrosis around the ducts, a severe grade of necrosis.

Dr. Nicholl's work on hyaloserositis is given a full acknowledgment without the term hyaloserositis being ever employed. We have learnt, from other sources, that Rolleston regards this as a barbarous term, and we freely admit that it is a hybrid; nevertheless, we believe that it has come to stay—it is already taken up by German writers—and that for a reason which Dr. Rolleston's treatment of the subject itself demonstrates. That word will be accepted which best expresses a given idea, and if no word of true Greek parentage will express that idea then a snappy mongrel is better than a blue-blooded circumlocution. After all the first virtue of a word is its utility, the second its parentage. We may deplore the parentage of "appendicitis" for example, but no compound of wholly Greek origin effectually supplies its place. And so we would

point out that "universal chronic perihepatitis," as Rolleston would term what Curschmann first denominated "Zuckergussleber," is most inadequate. The chronic hyaline perihepatitis is only one manifestation of a general condition which affects not merely the liver but other portions of the peritoneal serosa, and frequently the pleuræ and the pericardium as well. A word is needed to express at once the fact that this process is liable to affect serous membranes in general and that the deposit has a characteristic hyaline appearance, and 'hyaloserositis" exactly fulfils the want.

One last note, which may seem almost ungracious, considering the prominent position given to our own classification of the cirrhoses and it is this, that, in affording that classification we expressly pointed out the very fact which Rolleston brings against it, namely, that several of the subdivisions are of no clinical importance, and even histologically are rare and of slight extent; so we concluded, with him, that for practical purposes, portal biliary and the pericellular cirrhosis of (most often congenital) syphilis are the forms that alone deserve detailed consideration.

That these are the severest strictures we are able to bring against the work is, we think, sufficient indication of its high standing.

J. G. A.

THE SURGERY OF THE DISEASES OF THE APPENDIX VERMIFORMIS AND THEIR COMPLICATIONS, by WILLIAM HENRY BATTLE, F.R.C.S., and E. M. Corner, M.B., B.Sc.,—Chicago, W. T. Keener & Co., 1905, pp. 208.

This is a modest work compared with some others on the same subject, and yet it treats of (as well as the pure inflammatory conditions of the appendix) carcinoma, tubercular and other diseases of this troublesome organ, and the relation of appendicitis to life insurance. Anything Mr. Battle has to do with is well done, and this work is no exception to the rule. First, we have the history of the disease and its surgical treatment, with a clear account of its anatomy, macroscopical and microscopical. The authors state that the appendix is not functionless, but that the fluid secreted by it has some influence on digestion, that it is not an organ undergoing degeneration but is a specialised part of the intestinal canal, containing lymphoid tissue. However this may be, and Sir Wm. Macewen holds much the same views, we can do very well without it, and it cannot be denied that as age advances it becomes more atrophied, and in a certain percentage there is a tendency to obliteration. Certainly, judging from comparative anatomy, the appendix in man ceases to grow *pari passu* with the cæcum itself, and the transition from

the cæcum to the appendix differs very much in this respect from such animals as the beaver, and the porcupine where there is an enormous prolongation of the cæcum beyond the ileo-cæcal valve. In carnivora the cæcum is small and there is no appearance of its prolongation. The pathology, etiology, and bacteriology of the appendix is dwelt on, and those non-suppurative, acute and chronic forms take up a chapter. The various methods of removal are described and the one advocated by the authors, which they say originated in St. Thomas' Hospital, is that of incising the superficial structures down to the rectus muscle on the right side, incision of the sheath and temporary displacement of the rectus. The various methods of removal of the appendix are alluded to, but the favourite one of the author's is clamping the organ at its base, ligating the compressed part, and cutting away with scissors, and then the stump is buried in the cæcum. This is described as the quickest, neatest and most aseptic method of removing the appendix. We have operated for years, and have tried every method except the clamp, which seems to us particularly European. The method which is the simplest gives the best results, and the quickest is the old one of ligating near the base, cutting off with scissors and cauterizing. The ligature destroys the inner coats quite as well as the clamp, and experience shows that the results are as good as by any other method. In diffuse peritonitis the pus is evacuated, the appendix removed and the abdomen flushed with saline, adequate drainage is provided and salines injected into the veins. The complications, such as diaphragmatic abscess, fæcal fistulæ, hernia, obstruction, etc., are shortly but well considered, as is also the bearing of this disease to life insurance. If the patient has had a recent attack, an extra premium should be demanded; if several attacks have been experienced, then a period of two years must elapse, after operation in the interval six months; after operation in a suppurative case, two or three years. We have read this book with profit and interest, and can heartily recommend it as a safe and trustworthy guide in this disease. American authorities are freely quoted, and full credit is given to the surgeons of the United States for their pioneer work.

Lateral Curvature of the Spine, and Pelvic Deviations. By Richard Barwell, F.R.C.S., sixth edition; London, Baillière, Tindall & Cox; 1905. Canadian Agents, H. A. Carveth & Co., and Chandler and Massey, Toronto.

Although a sixth edition, this is an entirely re-written volume, and it is evidently the work of a man with a hobby; this is not to say that it is not a good book, for the hundred pages into which it is condensed

cannot be read without seeing that Mr. Barwell has compressed the results of a great labour into very small space, nor can it be read without seeing that the author has a most fervent belief in what he says, and that the whole book has come out of his own thought and experience. These points all warrant the most careful reading. The author indulges in no theoretical discussions, describes no pathology, and begins and ends with what a careful observer can see and feel from the outside of the patient. He uses photography to its fullest extent in his diagnosis of the case, and obtains a full length photograph of the back and legs of a patient who stands, in a fixed position with reference to the upright and the horizontal planes, upon a measured line on the examining room floor. The result is that with a square , the deformity can be demonstrated on the photograph, and one's impression from reading the book and observing the many plates, is that Mr. Barwell has a very correct method of preliminary examination. In treatment, the author quarrels with many of the older more or less recognized modes, and he is the avowed enemy of all the complicated harness that does seem so irrational from the standpoint of everyone but the instrument maker. With regard to extension for crooked spines, he particularly asks "When you wish to straighten a bent shaft do you do it by pulling at both ends?" In three chapters, devoted to treatment of pelvic deviations and lumbar and dorsal curves, the author advises a minimum of apparatus, and of the simplest, while he depends upon the patients' co-operation in a habit of correct posture, by education of muscles, the whole being constantly subjected to the law of the plumb line.

TEXT-BOOK OF INSANITY BASED ON CLINICAL OBSERVATIONS.—For Practitioners and Students of Medicine. By DR. R. VON KRAFFT-EBING, late Professor of Psychiatry and Nervous Diseases in the University of Vienna. Authorized translation from the latest German edition by Charles Gilbert Chaddock, M.D., Professor of Diseases of the Nervous System in the Marion-Sims-Beaumont College of Medicine, Medical Department of St. Louis University, St. Louis, Mo., etc. With an introduction by Frederick Peterson, M.D., President of the New York State Commission in Lunacy. Pages xvi-638. Royal Octavo. Price, extra cloth, $4.00, net; half-russia, $5.00 net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

Professor Krafft-Ebing was well known as one of Germany's most distinguished alienists, which fact, combined with his acknowledged skill as a writer, is a guarantee for the merit of the book now before us.

Probably no one had a richer clinical field in the department of psychiatry than the author, during his experience of thirty-three years spent in teaching and in the observation of the insane. His work has been the recognized clinical text book for many years in most of the Continental universities, but now for the first time makes its appearance in English, thanks to Dr. C. G. Chaddock, who has furnished us with a really admirable translation.

Dr. Krafft-Ebing in his text-book has given us essentially the views of German alienists, and has made his exposition of psychology and psychopathology especially clear and prominent. The work is divided into three books, each of which is again sub-divided into several parts, the whole forming a compendium of almost all that is known in a still obscure field of general medicine. Book I, is an introduction to the study of psychiatry; book II, treats of the general pathology and therapy of insanity; and book III, deals with the special pathology and therapy of mental diseases. The portions of book II, relating to the anomalies of the emotional, intellectual and motor sides of mental life are especially valuable, while the chapter on paranoia, in part III, is one of the best and most lucid expositions of this interesting and very important disorder that we have yet seen. The cases recorded are aptly selected, well depicted and form a meritorious adjunct to the letter press proper. As might be expected from the author of "Psychopathia Sexualis," considerable, and to our mind, undue stress is laid on morbid erotic manifestations as symptomatic of mental disturbance.

Taken as a whole the work is an important addition to the literature of this subject. For the purposes of the student there are books, such as those of Clouston, Blandford, Brower and Bannister, or Peterson, which will always be more popular; but for the specialist and the general practitioner, who takes more than a passing interest in the subject of psychiatry, Krafft-Ebing's book will be found extremely useful and instructive. T. J. W. B.

Pathological Reports, Montreal General Hospital, No. IV. Reference index of post mortems, from 1st January 1896 to 31st December, 1902, pp. 213. Compiled by John McCrae, B.A., M.B., assisted by Oskar Klotz, M.B., and W. G. Ricker, B.A., M.D.

This is a continuation of No. III., of the series, which was compiled by the late Dr. Wyatt Johnston and published by the General Hospital in 1896. With the present publication, there is available the outlines of 2,037 autopsies, in which each condition mentioned in the anatomical diagnosis is indexed, so that the frequency of any condition, and the

cases in which it has occurred can be found with very little trouble; thus the excellent pathological material of the hospital is made available, as far as possible, to outside enquirers.

One notices in the index that tuberculosis of the lungs and cases of general miliary tuberculosis together total 445 cases, that is, about 21 per cent. of the whole number. The index of lobar pneumonia shows about 150 cases, and that of broncho-pneumonia about 200 cases, the latter doubtless being frequently part of a terminal infection. That part of the index which refers to endocarditis is divided so as to indicate the relative frequency with which single valves or groups of valves are affected, and conveys, some useful information even on the most casual inspection.

The Montreal General Hospital is to be congratulated upon the spirit indicated by the publication of such material, even at considerable expense; a hospital increases its usefulness in a scientific sense whenever its material becomes thus available, in however slight a degree, to those outside its own walls.

PROGRESSIVE MEDICINE, Edited by HOBART AMORY HARE, M.D., assisted by H. R. M. Landis, M.D., March, 1905. Lea Brothers and Company, Philadelphia and New York.

The contents and writers of this volume are: Surgery of the Head, Neck and Thorax, by Charles H. Frazier, M.D.; Infectious Diseases, Including Acute Rheumatism, Pneumonia, and Influenza, by Robert B. Preble, M.D.; The Diseases of Children, by Floyd M. Crandall, M.D.; Laryngology and Rhinology, By Charles P. Grayson, M.D.; Otology, by Robert L. Randolph, M.D. This Number makes a volume of 300 pages, and contains the best which has been learned, upon the subjects with which it deals, in recent months. The literature has been carefully scrutinized, and especial credit is given to New York and German Journals. A book of this nature is essential for any physician who would keep in complete touch with his profession, and there is none better than Progressive Medicine. The March issue creates a particularly favourable impression.

THE MEDICAL EXAMINATION FOR LIFE INSURANCE.—By CHARLES LYMAN GREENE, M.D., St. Paul. Second edition revised and enlarged, with 99 illustrations, 466 pages. Price $4.00. Philadelphia, P. Blakiston's Son & Co., 1905.

This is the best book which we know upon life insurance. It is at once philosophical and technical, complete and well arranged. The

historical account of life insurance is full of interest. There is entire appreciation of all the problems which the medical examiner and director has to solve. The statistical information is most useful, and covers nearly every aspect of the underwriting of lives. The insurance of sub-standard risks is dealt with wisely, and with a full apprehension of the difficulties which lie in the way of a just arrangement of premiums. The balance of the book is not improved by the recital of cases of attempted fraud, and it is time to leave the casting of stones at Oscar Wilde to the vulgar. The present reviewer has read the whole book—tables and all—with interest and profit.

THE OPHTHALMIC YEAR-BOOK.—A digest of the Literature of Ophthalmology, with index of publications for the year 1903; by Edward Jackson, A.M., M.D. The Herrick Book and Stationery Co., Denver, Colorado, U.S.

This is a book of 250 pages that condenses the current literature of the year into a form in which it is available for the ophthalmic surgeon, given in sufficient detail to make the material applicable in practice. It is not possible to notice in detail material of so wide a scope; the index appears to be a very useful one, and by means of it, and the alphabetical list of authors given in the appendix, it is possible to place any known reference with which the book deals; this will be admitted by all who deal with scientific literature, to be no small virtue. We notice reference to articles upon "Skin Grafting in Opthalmic Surgery," by F. Buller, M.D., and "Gumma of the Ciliary Body," by F. Tooke, M.D., of Montreal.

THE SURGICAL DISEASES OF THE GENITO-URINARY TRACT, VENEREAL AND SEXUAL DISEASES.—By FRANK LYDSTON, M.D., Professor of the diseases of the Genito-Urinary Organs and Syphilology in the Medical Department of the State University of Illinois. Revised edition, illustrated with 233 engravings and seven colored plates. Philadelphia. F. A. Davis Company, Publishers, October, 1904.

The first edition was published in September, 1899, since when no very striking advances have been made in genito-urinary surgery. The organic salts of silver have come to be very generally used in the treatment of gonorrhœa. The methods of using these salts are fully detailed in the present edition. The book has been well received, and has taken a high rank. The illustrations in the present edition are numerous and of a better quality than in the previous. The book is to be commended as reliable and up to date.

Medical News.

DISTRICT OF ST. FRANCIS' MEDICAL ASSOCIATION.

The regular meeting of the District of St. Francis' Medical Association was held in Sherbrooke on March 8th. Dr. F. J. Austin, president, in the chair. There were present:—Drs. Camirand, Genest, MacKay, Byers, King, Smith, Bachand, Gadbois, Rioux, Lamy, Stevenson, Banfell and Williams. Drs. J. R. Byers (Sherbrooke), A. Pelletier (St. Famille), were elected members of the association. A committee composed of Drs. Austin and Camirand presented to the meeting the resolution, which had been forwarded to the Minister of Justice, dealing with the question of the indiscriminate sale of wood alcohol. Cases in practice were related by some of the members present.

Dr. Camirand reported a case of sarcoma of the brain, which had perforated the skull and spread out over the temporal and parietal bone beneath the scalp. The extracranial portion was six times larger than the intracranial, although there was a marked depression in the motor region of brain, there was an almost complete absence of pressure symptoms.

Dr. Smith reported a case of sudden death in a healthy girl, aet 17. Severe headache, general depression and finally stupor and death followed in rapid succession. The length of time from onset to the fatal termination was only six hours. No cerebral symptoms, outside of stupor, were present. Rupture of cerebral artery at the base of the brain was the diagnosis. No autopsy could be obtained

Dr. Bachand presented patients upon whom he had performed a modified operation for mastoid disease, with good results in each case.

Dr. Williams reported a case of a large cystic tumour in a child 12 days old. It was situated on the left side of neck and extended from the tip of the mastoid to the clavicle, and was the size of a small orange. The growth was removed under chloroform narcosis.

Dr. Byers read a paper on "Relative Aortic Insufficiency."

ROYAL VICTORIA HOSPITAL.

Report for month of February, 1905:—Patients admitted, 214; discharged, 207; died, 11; medical, 59; surgical, 96; opthalmological, 22; gynæcological, 28; laryngological, 9. Out door department:—Medical, 612; Surgical, 332; opthalmological, 348; gynæcological, 67; laryngological, 386. Total, 1,745. Ambulance calls, 62.

NOTRE DAME HOSPITAL.

Admitted during February, 1905:—172 patients. Discharged, 167.

In the various out door departments 1,760 patients were treated. The ambulance responded to 64 calls, 41 of which were for accidents and 23 private.

HOTEL DIEU.

Were treated during month ending February 28th, 1905:—263 male and 192 female patients. Discharged, 128 male and 91 female patients. Died, 9 male and 4 female patients.

Coroners of the Province of Quebec met in Quebec on February 22nd, and formed the Association of Coroners of the Province of Quebec. The following officers were elected:—President—Coroner G. W. Jolicœur, Quebec. Vice-President—Coroner Bachand, Sherbrooke. Secretary-Treasurer—Coroner Triganne, Plessisville. Executive committee—Coroners Gauthier, Upton; Vallincourt, St. Anselme; Chevalier, Iberville.

The meeting was presided over by Coroner McMahon, of Montreal.

Dr. David G. Thompson, of Hamilton, died on February 19th, in the 41st year of his age. He was a graduate of Trinity Medical College.

Dr. N. Agnew died on March 18th, 1905, in St. Paul, in the 77th year of his age. Dr. Agnew practised in Brandon since 1886, and before that in Winnipeg for eight years.

Dr. Elisha D. Roach, of Tatamagouche, died February 9th, 1905, at an advanced age. He was a graduate of the University of Pennsylvania, and practised medicine for 40 years.

Dr. J. A. Greig, formerly of Kincardine, Ontario, Winnipeg, and North Dakota, died in Washington of tuberculosis. He was a member of the first graduating class of the Manitoba Medical College.

Dr. Philip Chisholm, the oldest resident of Cape Breton, died on March 11th. Dr. Chisholm was born at Loch Charron, Rosshire, Scotland, 102 years ago last June, and came to Nova Scotia in 1821.

Dr. M. H. Brophy, of Quebec, died on February 24th, in the 45th year of his age. He was a graduate of Laval, and a member of the College of Physicians and Surgeons, and Bacteriologist to the Government vaccine farm.

Work is to be commenced on the new hospital, founded by Mgr. Guay, at St. Joseph de Levis, about the first of April. The building is to have a frontage of one hundred feet by sixty feet deep, and will have three stories. It will be built of stone and brick.

Retrospect of Current Literature.

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

J. Bentley Squier, M.D. "Observations on Twenty-eight Cases of Prostatectomy." *Medical News*, February 18, 1905.

The writer favours the perineal route and the vertical median incision. The advantages claimed for this method are low mortality, completeness of result, openness to visual dissection. In answer to the advantages secured by adopting the suprapubic route, the removal of a calculus and an enlarged middle lobe, the writer holds that if the calculus be too large to be removed through the perineal wound a suprapubic could be done and dependent drainage secured, while for the enlarged middle lobe it is often largely a question of manual dexterity on the part of the operator. Prostatic hypertrophy is not regarded as a senile condition, but as an interstitial change which has been insidious in its onset, first affecting the innervation of the gland and its enclosed urethra, giving rise through its close connection with the hypogastric plexus of the sympathetic nerves to many reflex symptoms in the kidney and bladder, as well as those of a purely sexual character, and eventually, with the declining vigour of the patient's later years, becoming a mechanical obstruction to the outlet of an already overworked bladder. A proof of this view five cases are under observation where ages range from 23 to 40, in all of whom the gland is twice its normal size. They now suffer from faulty innervation of the organ only. That the time will come when such patients will be offered the radical operation for relief before the symptom of obstruction has set in, the writer firmly believes.

In seven cases the prostate was removed by suprapubic incision with perineal drainage. Of these three died, one from hæmorrhage and two from uremia. One lived a year and a half. The other remaining cases were ideal cures. Of the 21 cases of perineal prostatectomy there have been two deaths from uremia. As to the possibility of removing the prostate gland, leaving the ejaculatory ducts patent, the writer believes that if such does happen it is more the result of good luck than good management. In connexion with injury to the ejaculatory ducts attention is drawn to postoperative epididymitis, which occurred in seven cases, usually on the ninth or tenth day. Some cases ran an extremely acute course, and one ended in suppuration. To prevent this complication, ligation of the vasa deferentia prior to the prostatectomy is suggested. If the vertical incision be used the perineal tube and gauze

can be removed much earlier than when a more extensive incision is employed. They are generally removed in from 24 to 48 hours. Stress is laid upon the necessity for their removal. Three of the cases had a marked degree of pyelitis, but with the removal of the obstructing gland the condition was greatly improved. The majority of the cases call for treatment, directed towards the accompanying cystitis and loss of muscular tone of the bladder wall. Seventy-five per cent. of the cases had more or less advanced renal lesions, and it was observed that in many cases of renal insufficiency the condition was much improved by removing the urinary obstruction and so giving free drainage to both kidney and bladder..

T. C. Litler Jones, F.R.C.S. Eng. "A Case of Acute Hæmorrhagic Pancreatitis, Operation, Recovery." *Lancet,* February 18th, 1905.

The points of interest in this case apart from its rarity, are the age of the patient (26 years), the extremely foul and furred tongue, the absence of any known cause, the difficulty in diagnosis and the uncertainty of treatment. With the exception of a history of constipation the woman was in perfect health. While turning in bed to reach for her baby she was taken with a sudden severe pain in the abdomen. Though constipated she at once passed a small hard stool. The pain was accompanied with vomiting more or less persistent. Numerous enemata failed to obtain any result more than a little flatus. She was admitted 46 hours from onset of attack. An anxious expression, dry mouth and foul furred tongue, distended abdomen, fluid in the flanks, painful area in the epigastrium with localized swelling, pulse 128, weak and fluttering, temperature 96 F. was the clinical picture. A tentative diagnosis of perforated gastric ulcer was made. Upon opening the abdomen about three pints of blood mixed with serum escaped. Exploration revealed fat necrosis at the entrance to the lesser sac of peritoneum, an opening was made through the gastrocolic omentum and the pancreas found to be about three times its normal size, discolored, œdematous, and in places hæmorrhagic, though no free bleeding was present. The gland was incised longitudinally. No stone or abscess was found, but what seemed to be a dilated space, which was packed with gauze. Wound closed with the gauze for drainage. The packing was removed in 36 hours, when a discharge of clear, fluid pancreatic juice, began, causing trouble at the upper end of wound. The case was discharged perfectly well about two months later.

William J. Mayo, M.D., and Charles H. Mayo, M.D. "A Review of One Thousand Operations for Gall Stone Disease, With Special Reference to the Mortality."

The writers have taken the layman's point of view, that if a patient goes into a hospital alive and dies there, the death resulted from the operation. On such a basis the mortality attending an operation must necessarily be greater than when regarded as due directly to the operation, but it serves to remind us of the great importance which complications play against the recovery of our cases. The paper, as stated, is devoted for the most part to mortality statistics, and one cannot but regret the absence of conclusions which, drawn from so many cases, would add to our knowledge of gall stone disease and its surgical treatment.

George Emerson Brewer, M. D. "A Report of Eighty-Four Operations on the Kidney and Ureter." *Medical Record,* February 18th, 1905.

Of the 84 operations there were 27 nephrotomies, with eight deaths; 27 nephrectomies with one death; nine nephrorrhaphies with no mortality; ten decapsulations on five patients with two deaths, five operations on the pelvic portions of the ureter without a death, six emergency operations on traumatic cases with one death. The various pathological conditions requiring these different operations are reported and many of the cases are of unusual interest. Six cases of multiple septic infarcts are reported, the condition being limited to only one kidney, generally the right. Four had a nephrotomy performed and were fatal, while in two cases a nephrectomy gave recovery. With reference to calculus, in which class more errors are made than in any other renal condition, the writer takes up the various symptoms and methods of examination, that should enable us to make a correct diagnosis. His conclusion may be given as follows: While pain and tenderness were present in 100 per cent. of cases of stone it must not be forgotten that they were also present in a large percentage of cases in which no stone was found. That calculus may exist without pain was shown by Bruce Clark who performed 24 autopsies on calculus cases, in thirteen of which there had been no subjective symptoms during life. Hæmaturia was present in 52 per cent. of calculus cases and in 45 per cent. of cases without stone. Spontaneous hæmorrhage during rest or sleep generally means new growth, while hæmorrhage following exercise is strongly indicative of stone. Frequent or painful micturition was present in one

half of the cases of stone. Vomiting was found to be a very constant accompaniment of severe colic, but was present in a greater percentage of cases where no stone was found. Fever is rarely a symptom of uncomplicated stone, mild and moderately severe cases of calculous pyelitis often running a normal temperature, while the ureter remains patent, but will show an immediate rise if the uterer becomes occluded. Cystoscopy helped to a correct diagnosis in 66⅔ per cent., and was misleading in 33⅓. Ureteral catheterization proved valuable in definitely determining the side of the lesion, and in establishing the competence of the opposite kidney. With reference to the X-rays, we should reject all plates which do not show the outline of the psoas muscle and transverse process of the lumbar vertebræ, and look with suspicion on all shadows which do not have well defined edges.

MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY, H. A. LAFLEUR AND W. F. HAMILTON.

TYPHOID FEVER.

The subjects of interest which cluster about typhoid fever are at once both numerous and varied. The Widal test clears up certain doubtful and atypical cases. At the same time there is a group of cases in which, the decision has been made long before the agglutination test shows any sign of positiveness, not to speak of another group in which the reaction never comes throughout the whole course of the disease.

Rolly.—(*Münchener Med. Wochen.*, June 14th, 1904), pleads for an *examination of the blood* taken from one of the veins of the arm. He claims that even in the beginning of the illness, when agglutination and roseola are yet absent bacteriological examination of the blood is an invaluable aid to diagnosis, and leads usually to an early and definite result. Rolly describes a method of preserving the bacilli alive for 24 hours in a grape sugar medium with peptone, until it is placed in the hands of a bacteriologist. He describes also the methods of applying the Widal test with typhoid bacilli killed with toluol.

During the past two years, throughout Canada and the United States, ample opportunity for observing typhoid epidemics has been afforded those who practice medicine and especially students of sanitary science.

Dr. Stokes contributes a paper (Some typhoid epidemics studied by laboratory methods, *Journal of the Amer. Med. Assoc.*, February 25, 1905), describing several epidemics of typhoid fever—the sources of which were located by means of bacteriologic examinations.

In the first epidemic, a city numbering 12,000 people, had two sources of water supply and only that portion supplied from one source suffered. One street, the dividing line of the town, marked the line between the infected and the non-infected portions. A spring in a hollow supplied the various houses. Cleansing with formalin and disconnecting the spring from the service practically cleared the water of bacteria and the town of the disease.

Another epidemic of 61 cases in the round of one milkman was clearly traced to milk. The milkman's wife and son took typhoid fever and during the early part of their illness milked the cows. The well water was found contaminated with colon bacilli. An investigation of an outbreak of typhoid fever among the female employees in a factory, served to show that the milk was the cause. The men drank beer at their lunch, the women were served with milk from a dairyman just outside the city limits, and both women and men drank of the water supply in the factory. The water of the factory was free of colon bacilli, with only 450 bacteria per c.cm. The milk contained 4,500,000 per cubic centimeter and the colon bacillus was found in 1/1000 of a c.cm. There were no further complaints from this factory after the milk was discontinued.

Thayer has made a most careful study of the cardiac and vascular complications of typhoid fever.—(*Johns Hopkins' Bulletin.* October 1904.) The analysis includes 1,458 cases admitted to the Johns Hopkins' hospital from May, 1899, to January, 1904. The conclusions arrived at after a characteristically painstaking investigation are as follows:

1. Typhoid fever, clinically speaking, is often associated with symptoms suggestive of a great weakening of the heart muscles. A temporary insufficiency of the mitral valve results as indicated by an apical systolic murmur not infrequently transmitted to the axilla developing especially at the height of the disease; these murmurs usually disappear with convalescence. They may persist.

2. Endocarditis in typhoid fever is probably more frequent than is generally supposed. It was undoubtedly present in three cases out of 95 necropsy cases, while in three others it was suggested clinically.

3. Pericarditis is an unusual and an unimportant complication.

4. Phlebitis and venous thrombosis occurred in 2.6 per cent. of Dr. Thayer's cases.

5. Arteritis and arterial thrombosis is more frequent than is generally recognized, and is especially common in the central vessels.

6. A survey of our pathological material would suggest that typhoid

fever may be a not infrequent cause of focal arterio-schlerotic changes. This view finds support in the fact that in 21 out of 52 cases there were evidences of fresh endarteritis. In 13 out of 62 cases the coronary arteries were the seat of fresh endarteritis.

7. While the deleterious influence of typhoid fever upon the cardio-vascular system is not as great as that of acute rheumatism yet, through the unfortunate frequency of the disease in this country, it is probable that post-typhoidal cardio-vascular defects are not uncommon. It would be wise for the practising physician to bear this in mind and whenever possible to keep his typhoid patients under observation for several years following the disease.

Hydrotherapy in typhoid fever now embraces a more extensive use of water than is implied in the Brandt method of treatment. Cushing and Clarke have taken up the subject of copious water-drinking and polyuria in typhoid fever.—(*American Journal Med. Sciences*, February, 1905), and from observations of 100 cases draw the following conclusions:

1. Large quantities of water internally, a gallon or more in 24 hours, may easily be taken by typhoid fever patients, if administered in small quantities at frequent and definite intervals.

2. A copious elimination of watery urine at once follows, the degree of polyuria day by day closely corresponding to the quantities of fluid ingested.

3. Patients are more comfortable by this mode of treatment and toxic nervous symptoms are lessened.

4. The mortality, as well as the severity of typhoid fever seems to be still further diminished by this method of hydrotherapy employed as an accessory of the cool bath treatment of the disease. While recording the conclusion of these observers, it is interesting to note the mode of giving the water. Three pints daily has been set as the least amount which each patient should receive. Beside the patient's bed there is a quart bowlful of ice-water with a bent glass tube, enabling the patient to help himself with but little exertion. Four ounces of water every fifteen minutes during waking hours may be given. Every two hours during the day and once or twice at night, alternately six ounces of milk and six ounces of albumin water are given, amounting to about three pints more of fluid.

The chloride and water excretion in typhoid fever, with copious diuresis, is discussed by Sollmann and Hofmann in the same journal (February, 1905).

This study appears to have been prompted by the general teaching of chloride retention in febrile diseases. The summary and conclusion in-

dicating the results of their investigations, Sollmann and Hofmann have formulated in the following statements:

"The free administration of water in typhoid patients causes a large polyuria, exceeding three litres per day, and averaging over five litres. On isolated days nine litres are not rarely excreted. The percentage of chlorides and the total molecular concentration are much below normal, while the daily excretion of total dissolved molecules exceeds that of ordinary typhoid cases. The eliminating capacity of the kidneys is, therefore, not injured in typhoid nor by prolonged polyuria. No accumulation of fluid appears to occur in the body, the excretion being nearly parallel to the income....Diuretics do not increase the polyuria nor does calcium chloride appear to diminish diuresis.

The effect of polyuria on the chloride excretion, as compared with ordinary typhoid cases, consists in a diminution of the percentage and an increase in the amount excreted per day; minor variations in diuresis effect the percentage but not the daily output.....The chloride excretion varies strictly with the chloride income. The effect of calcium chloride is, however, delayed and comparatively small. Agurin, sodium, acetate and nitrate and urotropin had no effect on the chloride excretion, but iodides increased it. Moderate nephritis was without effect.

The excretion of water and chloride in typhoid fever appears to obey the same laws as in health. There is, however, a greater tendency to chloride retention in the fever. The difference appears to be only quantitative and not qualitative. It is greatly diminished by polyuria.

The prolonged restriction of the chloride income appears to produce no deleterious effects and the patients do not develop any "salt hunger."

The diversity of opinion upon typhoidal insanity in childhood (*Amer. Journal Med. Sciences,* February, 1905,) has led Dr. D. L. Edsall to investigate this subject from the following points of view:

1. The outcome of typhoidal insanity, when the condition occurs in children.
2. The influence of the nature of the mental disturbance on prognosis.
3. The influence of heredity on the incidence and the outcome.
4. The frequency of such conditions.
5. The age and sex of those affected.

It appears that typhoidal insanity in childhood is not extremely rare. "It was exceedingly easy to find over 80 cases mentioned in the literature," and to these Dr. Edsall is able to add several more. Admitting the difficulty of grouping the cases, and at the same time the like-

lihood of error—the writer finds 36 cases of mania, 26 of dementia, 6 of melancholia and 14 of delirium in convalescence with simple delusions or hallucinations, and one of chronic paranoia. A large proportion of the cases of mania show a very pronounced element of melancholia.

The outcome of the study of the cases, as shown by the figures quoted in the article demonstrates two important points. The first is that the percentage of cases in which insanity persisted (61 per cent.), is much nearer to the figures given by many alienists than it is to the statements of most medical clinicians or pediatrists. The second important point demonstrated is that dementias are of far graver prognosis than the other forms of insanity. Heredity does not seem to have any influence in causing persistence of the mental disorder, yet Edsall believes that this point has not been sufficiently investigated.

The oft-repeated statement that mental derangements are much more common in the late years of childhood than in the earlier, is not borne out by these figures. Sex seems to have no influence in determining an attack. A full bibliography is appended to this interesting article.

Another interesting nervous complication of typhoid fever is reported by Hahn (*Wien. k. Wochen*, No. 46, 1904.) A boy aged twelve years towards the end of the third week of an attack of typhoid fever developed areas of œdema, like giant urticaria over feet, face and hands. Shortly after he became aphasic, the mind remaining clear. The aphasia was of motor type and lasted for a week, and was attended with paresis of lower right facial muscles. While psychical and physical exhaustion or a gross lesion may account for similar conditions, Hahn inclines to the view that it was a vaso-motor change, toxic in origin and similar to those manifest upon the skin surface.

Coxitis. A rare complication in typhoid fever is discussed, and one example reported by Porter (*Amer. Medicine*, February 11th, 1905.) It appears that the inflammation in this joint may be due to the specific bacilli of this disease, to their toxines or to other organisms. Graff, speaking of the gross pathology of this condition, regards the synovitis as serofibrinous in character. It distends the joint and produces an inflammatory softening of the acetabular margin, and the pressure of the head of the femur by contraction in a fixed and adducted position causes a pressure atrophy of the outer part of the acetabular rim, permitting the head of the femur to slip slowly out.

W. F. Hamilton.

RETROSPECT OF RHINOLOGY.

In this department there is perhaps no subject that has received so much attention or in which so much progress has been made during the past year as in diseases of the accessory sinuses of the nose.

In this connexion there has been extensive pathological work done, with the result of improvement in the diagnosis and treatment of these distressing affections.

Escat has reported 10 cases of chronic maxillary sinusitis, operated on by the Claoue method, which consists in opening the naso-antral wall after removal of the anterior third of the inferior turbinate. This operation appears to have given satisfaction, and has simplicity to recommend it.

Killian's operation on the frontal sinus, in which he simultaneously opens the whole of the anterior ethmoidal cells, has diminished intracranial complications, and has won a deserved popularity.

The relationship between ozæna and suppurative disease of the accessory sinuses has met with a great deal of discussion, opinions of the various writers differing as to whether ozæna is caused by or merely co-incident with suppurative disease of the accessory sinuses.

In this connexion Hajek has an important contribution to the literature in the second edition of his "Pathology and Therapeutics of Inflammatory Diseases of the Accessory Cavities of the Nose."

A series of 12 cases is recorded. In four cases the ozæna depended on suppuration in the anterior ethmoidal cells. In three cases upon simultaneous involvement of the maxillary antrum and anterior ethmoidal cells.

In two cases upon suppuration in adenoid vegetations.

In two cases upon diffuse suppurative catarrh of the nasal mucosa, and one each on posterior ethmoidal and sphenoidal suppuration.

The treatment of focal suppuration has met with sufficient success to warrant careful investigation into the ætiology of this subject.

Jürgens (St. Petersburger Med. Woch., Feb., 1904), reports a fatal case of ozæna, in which purulent lepto-meningitis was found associated with acute empyema of the frontal sinuses.

The author considers the ulcerated nasal mucosa the primary source of infection.

Dr. W. Freudenthal is of the opinion that there is always associated with ozæna a bacillus analogous to the pneumo-bacillus of Friedländer.

Another branch of rhinology which has received much attention and in which progress has been made is in the treatment of septal deformities, and the "Window resection," as practised by Bonninghaus, Killian, Freer and others, has replaced to a large extent the older methods of straightening the septum.

More time and skill are required in this submucous removal of cartil-

age and bone, but the after results are so satisfactory, according to the advocates of this method, that the extra expenditure of time and trouble involved are fully warranted.

Although nasal polypi are of so frequent occurrence, so much work has been done, and so many theories advanced as to their ætiology, this still remains more or less obscure.

E. Yonge (Journal of Laryngology, Sept., 1904), regards the primary source of their origin as a localized œdema of the inflamed mucosa, and the determining cause of the œdema a degenerative and cystic dilatation of the mucous glands of the part. Lambert, Lack, Thurston, Cordes, Martin and others are of the opinion that nasal polypi usually owe their origin and tendency to recur to disease of the underlying bone, this being an osteitis and periostitis. More evidence, it would seem, is needed to prove the correctness of their views, though facts would warrant one in allowing that there is perhaps some justification for them, and there is manifested in certain quarters an increasing tendency to remove, along with the polypi, any underlying bone which may be diseased, the object being to render their recurrence less likely.

Encouraged by the experience of Finsen in the treatment of lupus, Dr. D'Onisio has made a careful study of the effect of radio-therapy and light treatment in ozæna, his experience having been so satisfactory that he has established in Turin an institution where this treatment can be carried out for cases of ozæna and chronic purulent otitis media.

Braeckhart reports satisfactory results from the use of submucous injections of paraffin in the treatment of ozæna, small quantities being injected at a time.

It is claimed that this method gives good results in all cases of ozæna, except those in which there is a concurrent sinusitis. Helsmortie also reports excellent results in atrophic rhinitis from the interstitial injection of paraffin.

The great popularity of subcutaneous injection of paraffin for the correction of nasal deformities is somewhat diminished, there being less enthusiasm manifested now than previously.

This may possibly be due to difficulties encountered in using it, to many disappointing results, and also to certain unfortunate accidents which have followed its use.

At all events it is now more generally recognized that its use has distinct limitations. Much has been written on the nasal origin of certain cases of asthma, and the relation of intra-nasal conditions to paroxysmal asthma. Alexander Francis has found that cauterization of the septal mucosa has been attended by surprising results in the treatment of this disease.

Hay fever naturally forms a subject of interest. Dunbar's serum has taken a prominent place in our therapy with by no means uniformly satisfactory results, though many cases are promptly and efficiently relieved, and it is also valuable as a prophylactic. Kyle advances the theory that in the altered chemistry of the secretions there is an explanation of many if not all cases of hay fever. According to him a local irritation is brought about in the nasal and other mucous membranes by chemical changes of the mucus-secreting glands, and that in all cases the predisposing condition is this altered secretion, the extraneous matter or pollen being only an associated factor.

By changing the reaction of the secretions, he claims to have been able to cure attacks either wholly or in part, and believes that 80 to 90% of cases can thus be relieved or cured. To Michaels, of Paris, belongs the credit of originating this theory, which, should subsequent investigation and experimentation prove to be correct, a very distinct advance in the ætiology and treatment of hay fever will have been made.

Dr. Brunow reports an unusual case, viz., chancre of the inferior turbinate. Two cases where rhinotomy by the sublabial route was performed for absolute nasal insufficiency are reported by Delsaux, the results obtained being in every way satisfactory.

In a brief retrospect of this nature, it is of course impossible to record fully all that has been done in a year's work in the department of rhinology, though it is to be hoped that to some extent the progress made during the year 1904 has been demonstrated. W. H. J.

Society Proceedings.

SOCIETE MEDICALE DE MONTREAL.

Meeting of February 28th, 1905.

Dr. O. F. Mercier, President, in the Chair.

Dr. L. P. Normand, of Three Rivers, President of the Third Congress of French-speaking Physicians of North America, communicated a paper on three cases of hypertrophy of the spleen, preceding his report by a few remarks on the physiology and anatomy of this organ.

I. Case.—Male, aged 50, no trace of malarial infection, presenting an old standing hypertrophy of the spleen, which filled the entire left half of the abdomen, but caused no inconvenience other than its great weight. Cancerous degeneration abruptly set in, without apparent cause, and rapidly carried off the patient.

II.—In a two year old child (mentally weak), was found a very large spleen. After an attack of typhoid fever, hypertrophy completely dis-

appeared. One year has now elapsed and the enlargement has not returned.

III.—Male, aged 29, had had several hæmorrhages of the stomach and bowel. On examination, a spleen, enlarged to the full capacity of the left portion of the abdominal cavity, was detected. Following a very severe intestinal and gastric hæmorrhage, an operation previously proposed and refused, was accepted. Dr. Normand performed the ablation of the spleen without trouble and a speedy and uneventful recovery followed. Patient left the hospital on the 17th day after the operation. Dr. Normand was warmly congratulated for the interesting cases reported, and the success that crowned his operation.

Dr. Dubé said he observed a large number of hypertrophic spleens and would not hesitate to recommend ablation of the organ whenever were present serious disorders caused directly by the affection.

Dr. de Martigny did not agree with Dr. Dubé and thought that hypertrophy of the spleen was rather a rare affection. He further asked Dr. Normand if quinine had been given in case No. II. during typhoid fever—for authors ascribe several cures to the prolonged administration of quinine.

Dr. Normand answered that quinine had been given in the second case during typhoid fever, but in small doses only. Dr. Normand thanked the members for the kind welcome received, and a friendly entertainment at the "Lafontaine Club" closed the event.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The tenth regular meeting of the society was held Friday, February 17th, Dr. J. A. Macdonald, president, in the chair.

F. A. L. Lockhart, M.D., presented a pathological specimen of hydrosalpinx, and gave a history of the case and description of the specimen, which appear at page 259.

John McCrae, M.D.—A case of atresia of the pulmonary artery, with transposition of viscera; a second case of transposition. This case report was published in the March number of this Journal.

D. J. Evans, M.D.—In demonstrating this case to the students at the Maternity Hospital, I drew their attention to the fact that the mother had a hare-lip and cleft palate and that this condition was not infrequently hereditary, so that it was wise in such cases to be on the alert for all forms of congenital deformities of the fœtus. Then in the preliminary examination and palpation of the patient the heart murmur was detected. It was systolic and of a fairly harsh character. The

possibility of the infant turning out to be a " blue baby " was mentioned to the class.

Dr. Ridley Mackenzie read a paper upon, Injury to Head and Face From Forceps, during Labor, with report of cases from the Montreal Foundling and Sick Baby Hospital. This case report appears on page 257.

D. J. Evans, M.D. It is interesting to note that in all these cases reported by Dr. Mackenzie, there had been no evident injury to the brain, and this bears out the advice in the text-books as regards treatment, to leave such cases alone. It is wonderful how much damage the skull can receive without injury to the child's development, probably because the skull is chiefly cartilage and the fractured pieces are absorbed, as can be seen in one of the specimens. One of the two commonest causes of these fractures is high forceps operation before the os is fully dilated, and the other is in persistent occipital posterior cases, where perhaps the case has not been diagnosed correctly; if there has been arrest of the head high up there is great compression brought to bear on the head bone in order to facilitate delivery. One such case I have now under observation, where the child's head was large, and the pelvis was not roomy, it took an hour and three-quarters very careful work in order to deliver the child. The child is doing well but has a double cephalo-hæmatoma. There is no evidence of internal injury. The hæmatomata are slowly absorbing, though on one side I am very doubtful whether or not the skull is damaged, I was particularly careful to use compression as little as possible in the forceps operation.

The paper of the evening was read by Dr. Wesley Mills on the subject of, Certain Problems of the Nervous System. This article appeared in the March number of this Journal. The following is the discussion which ensued upon the reading of the paper:

Geo. H. Mathewson, M.D.—There is no doubt that clinically there is some form of regeneration or taking up of the work of a destroyed nerve, which goes on very slowly in most cases. I have under observation a young man, who, some three years ago, received a violent blow from a baseball bat on the right side of the neck and chest. Immediately after the accident there was great œdema of the right arm, and the right side of the face, neck and chest, with ptosis and extreme myosis of the right eye, which proved that the cervical ganglia, or nerves of the right side had been damaged. The myosis is now only of moderate degree, while the ptosis is only to be seen when the patient is feeling tired or out of sorts. There is still dryness, due to lack of sweat

secretion, in the right arm and hand, which latter require the frequent application of oil to keep it comfortable.

Have we here a regeneration of nervous structures, or have branches from some functioning nerve made connection with the ganglia, or has some other part of the man's brain or nervous system taken up the work of the damaged structures?

G. E. Armstrong, M.D.—In regard to the surgical results in nerve repair, a paper was read before the American Surgical Association by Powers, in which he found that in a very large percentage of the cases reported of nerve suturing the reports were so inaccurate and indefinite as to be really unavailable for serious discussion . In the Montreal General Hospital there have been a great many nerves sutured and the immediate suture seems to have been successful but the secondary is another matter. By immediate I mean where the ends are approximated immediately after the injury. Bridging a defective area, takes on a more serious aspect. In some of these cases the sensation was reported as returning and the after disastrous effects may have been from the fact that the growth which perhaps has destroyed the nerve has also returned and secondary paralysis with it or amputation. As a matter of clinical experience, however, cases do come to us, often months after the accident, with no power sensory or motor in the nerve, and after certain surgical procedures and the lapse of a certain length of time, the function is resumed, and the most successful of these procedures is what is called the flap method, which I think gives better results than insertion or grafting of another nerve, although this too has sometimes been successful. A case is reported I am not sure where, in which a portion of spinal cord had been introduced into a breach of two inches in the median nerve, with, if I am not mistaken, a restoration of function. Transplantation of sciatic nerve often fails completely, and yet cases are reported where catgut has succeeded, and it has been found also that a tube is of some help. Some surgeon reported that the putting in of a small bone from one end to the other, seemed to direct the downgrowth of the nerve and bring about in that way a more satisfactory and perhaps earlier communication. The question is so serious in some instances where the musculo-spiral was defective for two or three inches the surgeon resected the humerous to some extent, and in that way got the nerve ends together. One case was exhibited later and the function was pretty well restored. But of all the methods so far, I think, surgical experience would show that the flap method is the more generally successful method, but no doubt this implantation has

been very successful to a certain extent though there is a lot to learn about it yet.

A. R. Pennoyer, M.D.—I have had the opportunity of observing several cases of section of the median nerve, two particularly, that are of interest in connexion with some features of this discussion.

The first of these cases I saw twenty-two years after the median nerve had been severed, no operation for repair having been done; it presented complete atrophy of all the muscles supplied by the nerve, and the patient had a practically useless hand. Here apparently though a very long period had elapsed there was evidently no attempt at establishing a functional union through the nerves of the adjacent muscular tissue.

The other case is one in which the operation for suturing the nerve was carried out eight years ago, nine months after the injury which severed it, took place, and here there was some return of sensation on the third day after operation. The improvement in sensation and in nutrition and power in the muscles steadily improved without any after treatment —except for a short time massage—and in a year the hand was as good as its fellow. To-day one could only distinguish the affected hand by the scar of operation.

D. A. Shirres, M.D. There are many points which lead us to consider regeneration is from above downwards, and not from the periphery towards the centre. It is frequently noted that if a nerve is divided, say about the ankle, regeneration is slow to take place, as compared to a nerve, of the same size, that is cut in the thigh or axilla. This, I believe, goes to show that the nearer the cell body,—in other words the vital centre—injury is done to the nerve, the quicker regeneration takes place.

As Dr. Mills stated, experimenters, who had excised a piece of a nerve and given time for complete degeneration to take place in the peripheral part, found on examination—having used Pal Weigert stain —what they thought to be new regenerated nerve fibres, even though continuity between the peripheral and proximal ends of the nerve had not taken place. The mistake they made, I think, can be explained in the following way:—Those small myelinated fibres that were seen, were only myelin sheaths that had been formed from the nuclei of the neurolemma sheath; later if the ends of the divided nerve were approximated, the axones would come down and penetrate the empty sheaths. Or another explanation might be, that other nerve fibres in the neighbouring tissue had grown into the substance of the nerve and given the erroneous impression that regeneration had taken place.

Sir Wm. Gowers two summers ago, made the remark when describing the likelihood of nerve fibres creeping in and anastomosing with the peripheral part of the cut nerve, that when the Almighty gave us such a perfect anastomosis in our blood circulation, he also gave an anastomosis in our sensory neurones, and he did not doubt, though it has not been proved as yet, that we have a more or less perfect anastomosis in connexion with our motor neurones. As an example of a sensory anastomosis, take a case where transplantation of a large piece of skin has been carried out. The skin is first anæsthetic to all sensations. After some time having elapsed normal sensations develop, which goes to show how nerve fibres have a tendency to wander in and penetrate neighboring parts.

In the case where Dr. Elder removed the supraorbital and infraorbital nerves for the relief of tic douloureux, it was shown immediately after the operation that the area of the skin supplied by those two branches was completely anæsthetic to all sensations. Within a few days, sensation first subjective, then objective began to reappear. A fortnight after the operation the patient could feel touch and pain over the previously anæsthetic areas. It was impossible for regeneration to occur by that time, but the sensory fibres from the neighboring areas had grown into the region supplied by the supraorbital and infraorbital nerves. The assurance of Mott, Sherrington, and others, in London last summer, for the neurone theory for teaching purposes and for the simplifying and understanding of clinical signs is of very great value.

As to Dr. Armstrong's remark, viz.: that from what he had read of late in connexion with nerve suturing and nerve transplantation, he was inclined to believe the results were far from satisfactory, and that from his own experience in the hospital, results had not been favorable, the explanation for this is, I think, that treatment,—electricity, massage, etc.—has never been carefully carried out, or prolonged sufficiently to give satisfactory results. In the wards or out-door of a general hospital, as a rule, one has not the opportunities or time to do this.

Dr. Harvey Cushing in his operations of transplanting the facial nerve into the spinal accessory did not expect and did not get anything like perfect results till eighteen months or more had elapsed, and during that time treatment both by massage and electricity had been carefully carried out.

In my experience in cases that have come under my care within the last few years, if we failed to obtain results within a period of three or four months in cases of division of the musculo-spiral or other nerves,

where union had been established surgically the case was looked upon by the majority of us as hopeless. Now this was a mistaken idea, for in cases where we know continuity is present, in which pressure by trauma or otherwise has produced such molecular change in the nerve that symptoms of complete motor and sensory paralysis are present, we do not as a rule find function re-established before six months, or longer in some cases. How then can we expect earlier regeneration in cases where the nerve has been divided and suturing has not been carried out for months after the accident. The same can be said of cases of paralysis of motion and sensation due to pressure on the spinal cord without a break in continuity. Recovery of function, even with the most careful and constant treatment, cannot be expected under a period of eight months. In cases where the cord has been divided and an attempt made at suturing, one would have to carry out treatment likely for over a year before any marked return of function could be looked for. Therefore, I have come to the conclusion that in transplanting nerves or in suturing them or where the cord has received a serious injury we need not expect satisfactory results unless prolonged and continuous treatment is carried out.

In Dr. Pennoyer's case he stated that the median nerve had been sutured after a long period had elapsed between the time of the accident and the suturing, and that restoration of function had taken place without electrical treatment. I do not think that goes to prove electrical treatment is not of value. We know some people have recuperative powers. Some cases of pneumonia, typhoid, kidney disease, etc. etc., recover without treatment, while there are others in which if treatment had not been properly carried out, death would have ensued. The same can be said of diseased nerves. Within the last two years I have been giving electrical treatment more or less constantly every day to many varieties of nerve affections, the records of which can be seen on the file of the General Hospital. Time and again have I obtained results that were simply astonishing. They have been too frequent to be classed as mere coincidents. In the physiological laboratory, while experimenting on animals, one can see the action of electricity, in producing tone.

Medical men have not, as a rule, the belief they should have in electricity and this, I think, is due largely to the fact that the general practitioner has not the opportunity of using the different methods of electricity, nor has he the consecutive number of cases whereby he is able to judge its results. No doubt its use in the hands of ignorant men and charlatans has given a set-back to its advance, but one who is

practised and accustomed to treat cases constantly with electricity fully appreciates that this method of treatment does not get the acknowledgement it is so deserving of.

G. E. Armstrong, M.D.—I would like to ask Dr. Shirres if he has come across any cases of nerve division, untreated and unoperated, and what the results are after four, five or ten years.

Wesley Mills, M.D.—Such a case as Dr. Mathewson has referred to indicates clearly that nervous influences are constantly emanating from the centres and passing to the periphery, with the result, among other things, of maintaining muscular tone; though the case in question shows well that the process is subject to variation. These views are now widely adopted, though I was once very much alone in maintaining them. The whole subject of sensation is difficult to study in the lower animals for many reasons, so that it is as Dr. Armstrong has pointed out, most important that all human cases of nerve-grafting should be very carefully and patiently studied. No doubt regeneration takes place more readily in our domestic animals than in man, and in young animals than in mature ones. It is a subject of congratulation that in America there is a school of biologists directing its energies largely to the subject of regeneration in general, including the influence of the nervous system, on the original embryonic formation of tissues and organs and on the restoration of lost parts in animals at different levels in the scale of animal life, and at varying ages. Our scientific salvation lies in the use of the comparative method.

Such cases as Dr. Pennoyer has mentioned are difficult to explain It would sometimes seem that the supposed return of sensation in a very short time after operative nerve union, was a purely subjective phenomenon. Certainly sensation thus rapidly restored is rarely lasting, and none of the facts we know explains adequately such cases. The protoplasmic fibres referred to by Howell and Huber may throw some light on such cases, all the more as they are not permanent but like the sensation last but a short time, in some cases to be replaced by the proper mature medullated nerve fibres.

We have of late learned a great deal about nerve affinities. We know that the size, for example, of the nerve fibres has much to do with the question of union in any particular case. Why will not pre-ganglionic unite with post-ganglionic fibres? Why does the peripheral end of one nerve unite better with the central end of another than the reverse? Why will nerve fibres come in from outlying regions to find the peripheral end of some severed nerve? In these cases there is some ill-

understood attraction—some affinity our present chemistry does not explain.

It is plain to me that the whole truth does not lie either with those who assert or those who deny autogenetic regeneration. Both are right and both may be wrong. That the whole process is not determined directly from the centres is now clear; that they have a very great influence, both directly and indirectly, is also certain. Even the processes that take place in the peripheral severed nerve are, according to my views of the universal and constant influence of the nervous system, indirectly dependent on the influence of the centres. Again we must believe that Bethe and his followers are not wholly wrong, but that much in the process of regeneration is independent of the direct influence of the central end of the nerve. But still other facts and comparative studies are necessary before we know the whole truth on this large subject.

The eleventh regular meeting of the society was held Friday, March 3rd, Dr. F. R. England, vice-president, in the chair.

F. G. Finley, M.D., and B. D. Gillies, M.D., exhibited a pathological specimen of Embolism of the Superior Mesenteric artery.

Maude Abbott, M.D.—The specimens of one of the cases of infarction of the mesentery, referred to by Dr. Gillies is in the Pathological Museum of McGill Medical Faculty. The autopsy was performed at the Montreal General Hospital by Dr. Osler in 1877. The subject was a man of 40, who had vomiting and diarrhœa for eight days before death. Post mortem there was found a large aneurysm of the abdominal aorta, from which the superior mesenteric artery was given off by a dilated orifice which contained a clot. Dissection of the coats of the aorta, at the lower border of the aneurysm had taken place and had extended into the iliac arteries, death occurring from rupture of the external iliac beneath the pelvic peritoneum.

F. J. Shepherd, M.D.—I should like to mention a case of my own which occurred some twelve years ago. It was supposed to be a case of appendicitis in an old woman of 65. There was sudden onset of severe agonizing pain in the right side with vomiting and great tenderness. This was looked upon as probably an appendicitis, and as she was in a rather serious condition with rapid pulse, rising temperature, and abdominal distension, I operated and found plugging of the ileo-colic branch of the mesenteric by a cancerous mass from a cancer higher up. This had caused gangrene of the cæcum which produced a local periton-

itis simulating appendicitis. The patient lived for some time afterwards but she had a fæcal fistula.

F. R. England, M.D.—This case is interesting and is suggestive of the possibility that embolism may explain some of the obscure cases of peritonitis where no cause can be ascertained. I can recall two such cases where the autopsy failed to find any discoverable focus of infection.

Dr. H. S. Birkett reported a case of congenital bony occlusion of the right posterior naris, in which the remedial measure was the perforation of the mass with an electric drill.

R. H. Craig, M.D.—Dr. Birkett is to be congratulated on the successful result of such a rare condition. In July, 1903, a little girl was brought to me for nasal obstruction. Examination revealed a post nasal growth and large pharyngeal tonsils. Under anæsthesia I found that in the left posterior nares I could not pass a probe more than 4 cm. There was marked deflection of the septum to the right and the superior half of the nose was full of pus. I advised an operation and two weeks after removing the adenoid, I attempted, and succeeded in establishing a communication between the right nasal and posterior spaces. I found that the pus came from the sphenoid. I enlarged the natural opening of the sphenoid and put in a splint, the upper half of which was perforated. I saw the case about a week ago and communication is intact, but there is still pus in the nostril though it had been completely free from this during the summer months, the condition returning with the advent of the cold weather; it now requires frequent flushing to keep it clean. I reported this case in the Montreal Medical Journal for November, 1904. In Dr. Birkett's case it would seem that the septum was very little deflected and evidently little obstruction. I would like to ask what splint Dr. Birkett would use in this case.

F. J. Shepherd.—I have never seen this anomaly in the skull, and I think it must be rather rare, for I have examined many thousands of skulls. I do not know of any congenital condition which would be likely to produce this.

Dr. H. L. Reddy gave the notes of six cases of Cæsarean section, which appear at page 249.

D. J. Evans, M.D.—I think in the cases which Dr. Reddy has quoted to-night there is no one of them in which, according to the statements in the histories of them given, any other course was open to him in view of the fact that the cases all presented themselves early in labour at a maternity hospital, where aseptic conditions prevailed and skilled assistance was at hand. I think he is to be congratulated on the fact

that he has established practically two new indications for the operation, the case of the heart disease, and the hypertrophy of the cervix; both these conditions as indications for Cæsarean section are certainly rare. In the other cases there was no other course. This operation has certainly become popular in recent years, replacing the operation of symphysiotomy, as the mortality of this to both mother and child was considerably higher than Cæsarean section. Williams has collected 335 Cæsarean operations for various causes, and of these cases, operated on by different men in Europe and America, there were only 23 maternal deaths, and a very low percentage as regards the fœtal mortality. The operation is of course only to be undertaken by men of experience, in proper surroundings, and early. When the operation is left till after high forceps attempts have been made, or frequent examinations, the mortality runs up; but where the operation can be selected and undertaken early before much interference, there is no question about it as being probably the easiest way to deliver such women, both for mother and child. There is a new operation, particularly in cases where there is a relative indication of 8.5 cm.., in a flat pelvis and 9 cm. in a generally contracted. This is what is known as Gigli's operation or hebotomy. The symphysis is sawn through to one side of the joint and union by callous results in a permanent increase in the diameter of the pelvis, so that in several cases the subsequent labours have terminated without difficulty. It is probable that this operation will replace symphysiotomy in minor degrees of pelvic deformity.

J. A. Hutchison, M.D. I would offer my congratulations to Dr. Reddy. He kindly permitted me to be present at one of these operations, and I was much impressed with the dexterous manner in which the operation was performed, and with the well trained assistants and general suitability of the surroundings.

F. R. England, M.D.—I would like to ask if Dr. Reddy considers it always wise to produce sterility; in this case he seems to have left it largely to the wishes of the husband and wife. About two years ago, I met one of our French confreres from St. Gabriel de Valois, and he informed me that he had just done a Cæsarean section for the second time on the same patient, and that the mother and children had done well. An interesting point in the case was that on opening the abdomen the second time there was a hernial protrusion of the fœtal membranes at the site of the first incision which he had made in the uterine wall. Apparently he had not rendered the patient sterile. He also used a 10 per cent. solution of gelatin to check the hæmorrhage.

D. J. Evans, M.D.—I saw a case in Dresden of a woman who had Cæsarean section done five times. There are quite a few cases where it has been done several times. A few cases are reported where the uterus has ruptured in subsequent pregnancies, the condition of the hernia just mentioned has also been found. Recently some investigator had recorded the conditions founded in the primary wound; after repeated operation in many instances all trace of the previous uterine incision had disappeared altogether, in others the process has resulted in thinning out of the original wound; it must be in this condition that rupture would easily occur and where hernias can occur. Occasionally in the second operation the placenta has been found at the site of the uterine scar of the first operation. The softening of the scar tissue thus produced has led to rupture in a few instances.

It is early yet to pronounce definitely the limit of the indications for abdominal Cæsarean section. I am inclined to think that delivery per vias naturales by means of vaginal section or hebotomy, according to its conditions present many advantages over the abdominal route once these operations have been perfected.

F. A. L. Lockhart, M.D.—I think Dr. Reddy is to be congratulated upon the result of his cases, and upon the fact that he has emphasized the comparative safety of the operation, when it is recognized early, and I hope sincerely that it will lead to a great many more Cæsarean sections being done throughout Canada generally, provided, of course, that they are done with proper surroundings. There is only one criticism, and that is in connexion wtih the case in which there was a hypertrophy of the cervix. It seems to me that it is better not to open the abdomen in these cases, and if I had had that case I would have been inclined to do the vaginal Cæsarean section, where one avoids the chance of peritoneal adhesions and consequent obstruction, and the risk of ventral hernia occurring. The case on which Dr. Reddy operated for advanced heart disease is one in which he is to be congratulated for his bravery in undertaking such an exceedingly dangerous task. One case I recall was operated on comparatively early, the disease calling for the operation was myasthenia gravis, in which there was a great weakening of all the muscles of the body. Here the abdomen was opened, the fœtus delivered and the result was perfect to both mother and child.

H. L. Reddy, M.D.—Practically speaking it was Dr. England's remarks about this practitioner's work at St. Gabriel de Valois which decided me that if this could be done in a little French-Canadian town, with certainly doubtful aseptic surroundings, and by a man without any

trained assistants, then I could do it, and I decided that the next case I saw of this nature would certainly be operated upon if I had anything to say in the matter. About symphysiotomy personally I never mention the operation except to condemn it. Cæsarean section is mere child's play compared with this. It takes a longer time to perform and with no certainty that you have room enough to deliver your child after all, and you may leave your patient a cripple. As regards the operation Dr. Lockhart spoke about I feel that when you have a cervix of 5 inches it would have been a very difficult operation to do, much more difficult than through the abdominal wall. As regards rendering the patients sterile; in one of the Boston hospitals, the hospital management have taken the thing into their own hands and say you have no right to render them sterile. I do not agree in this because it is quite enough for a woman to go through such a risk once, and it is your duty to advise her to be rendered sterile. This operation should be done carefully, as it certainly has happened that where the tube has been tied and cut between that pregnancy has occurred. I remember one case in which the tube was removed on the one side and the ovary completely on the other, nevertheless pregnancy occurred. In my case it was tied with No. 7 catgut, and I am in hopes that sterility will be produced.

Joseph Macdonald, M.D., has severed his connection as managing editor of the *International Journal of Surgery* and has purchased all rights in the *American Journal of Surgery and Gynecology*. With the April number this Journal, modernized and largely increased in circulation will be issued from New York as the *American Journal of Surgery*.

Phipps' Institute for the Study, Prevention, and Treatment of Tuberculosis.—According to the report for the year 1904, 2,039 patients were under observation, of whom 1,130 were native-born and 769 were foreigners, while of 140 the nativity was not recorded. Many of the foreign-born had been in the United States for so short a time that it is assumed they were infected before landing. Of the entire number 6½ per cent. were negroes—a larger proportion than that of the negro to the white population of the city. Improvement took place in 537 patients, no improvement in 583, the result was not recorded in 884, and death resulted in 153.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXXIV. MAY, 1905. No. 5.

ADAPTATION AND TUBERCULOSIS.

BY

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In casting around for some aspect of the tuberculosis problem upon which to address this meeting, it struck me that it might be serviceable to take up the matter of adaptation in its relationship to the disease. The term possibly is unfamiliar to you, but it embraces a series of processes, both on the part of the organism, the human body, and of the micro-organism, the tubercle bacillus, which are of the highest importance. And I am of the opinion that it is the failure to realize the existence of these processes which renders it difficult for the majority of men to appreciate the various happenings in the course of this disease, and again the points at issue and their significance in the controversies that have arisen of late years regarding the same. It has seemed to me that all those, and they are many, who are interested in the work of prevention, would possess a more intimate appreciation of that work if they could acquire, as it were, a mental picture of the moves in the game,—of those moves whereby now the organism, now the micro-organism seeks to gain the advantage and checkmate the other. In truth it is a gruesome game but one of very vital import, this of the cells against the bacilli and the bacilli against the cells. Some of our moves are instinctive, or have been practised before against other bacteria; many have to be learned and tested during the course of play. Too often, not knowing the science of the game, and playing "bumblepuppy"—I forget its equivalent in chess—we make a wrong move at a critical moment and the game is lost, and loss is death.

Let us consider first the moves on the part of the organism, and in order to gain a clearer picture let us take the case of a disease of briefer course and apparently more self-contained in its gross effects upon the body. Has it ever struck you, I wonder, what takes place in a case of acute pneumonia? This you know is a bacterial disease, due to a mic-

Being the Address delivered at the Annual Meeting of the Dominion Association for the Prevention of Tuberculosis at Ottawa, March 15th, 1905.

rococcus, a minute rounded or lance-head shaped organism that hunts, if I may so express it, like the Northwest Mounted Police of the old days, or the Irish Constabulary, in pairs—hence we often speak of it as the diplococcus of pneumonia. You all know that the disease develops very rapidly. That rapid development is associated with an extraordinarily rapid multiplication of the diplococci so that these which, under ordinary circumstances, are not present in the lung, come to be present in teeming millions in the air sacs of the same, and there by their poisons, they set up so much irritation that all the air sacs of one or more lobes of the lung become solid through the intense inflammatory exudate that is poured out into them from the blood vessels, displacing the air that should be there. And so it is that in a very few hours the affected part of the lung comes to look more like a piece of liver than like a sponge with abundant air in its cavities.

And then you know that if all goes well, in four, or eight, or ten days, suddenly, in the course of a few hours, the crisis comes, the fever drops sharply, the patient feels better, and I may tell you that after this crisis we find the diplococci for the most part dead, or if not dead so weakened that they can have little effect on small animals.

This has always seemed to me as something approaching the miraculous, that bacteria grow abundantly in one of the tissues of the body for a few days, then as suddenly they are killed off and disappear. If they grow at first why do they not continue to grow—if eventually killed, why not killed at the start? Years ago we found out that this was not because they have exhausted the food supply. I do not know if this has been tried in connexion with pneumonia, but it has been repeatedly tested in the lower animals in connexion with one or other of the diseases from which these may suffer; it has been found that the tissues will afford abundant nutriment for the bacteria. It is not, again, that they are poisoned by the products of their own growth,—this occurs it is true when we grow them on broth in a closed test tube outside the body,—but we can make an emulsion of a pneumonic lung and while, if we add the diplococci to this, some will be killed (for as I shall point out, there are substances poisonous to the bacteria in such a lung), yet when a certain number have been killed the rest will grow freely. If the poisons were produced by the diplococci themselves then the greater the number of bacteria destroyed the more these poisons would be liberated into the lung emulsion and still less the chance would be for any to remain alive and multiply.

Neither of these explanations will suffice. The only adequate explanation for this eventual destruction of the bacteria is that of adapta-

tion. When first the diplococci began to grow in the lungs they did so because the tissues could not neutralise their poisons, but with continued growth and discharge of their toxines, these last diffuse out of the lungs and act in the tissues elsewhere in less concentrated form, and these react, becoming educated until the moment is reached when the cells of the body produce sufficient counteracting poison to kill off the bacteria and to neutralise their toxines, which toxines it is that do all the damage to the system.

And here is the interesting and important fact—a fact I think too little realized by most medical men, although instinctively all strive to act up to it. It is not the lungs alone that are in action in destroying the germs of the disease and so bringing about recovery, it is not even the white corpuscles or leucocytes which, passing into the lungs, accomplish the good effects; the whole organism, or practically the whole organism, is actively engaged in the process. Do not think that by this that I mean that the germs of the disease are disseminated all through the body. In a case of pneumonia of medium severity, one that recovers in due course, the diplococci are confined to the lungs; we do not find them elsewhere, or at most they are few and far between. But, notwithstanding this, the whole body plays a part in the engagement.

You have all, I doubt not, heard much of late years about these white blood corpuscles or leucocytes; how they are, as it were, at once the main avenging army and the scavengers of the body; without doubt these play a great part. We can see them in various stages full of bacteria which they have taken up, and at times we can make out that bacteria are undergoing digestion and destruction. Nay, it is not difficult for any one to experiment on himself, as Leishman has shown,—to take a few drops of his own blood, separate off the white blood corpuscles and taking a drop of blood serum, holding these in suspension, add to it a number of disease-producing bacteria of one or other order; in fifteen minutes time, kept at the body temperature, each little leucocyte can be seen to have taken up, it may be a score or more separate bacteria. But here is another fact. This eating up of bacteria does not depend upon the white blood corpuscles alone. It depends, as Wright and Douglas have shown recently, upon a curious interaction between the cells and the fluid of the blood. And if you take the white corpuscles of a man who has not had a given disease and place some in the fluid of his own blood, and place some others in the blood serum of a man who has successfully resisted that same disease—who has recovered from an attack—you will find that these little white blood corpuscles will take up very many more of the particular bacteria causing that disease in the latter case than in

the former. There is, therefore, something circulating in the general fluids of the body after it has gone through an infectious disease, something not local but generalized, something which was not there before in any amount and has therefore been elaborated during the course of the disease, and this aids in the destruction of the bacteria of the disease.

The same was noted some years ago in connexion with typhoid fever and that not merely after recovery but during the progress of the disease. We utilize the fact now as a most useful means in diagnosing doubtful cases. In typhoid the bacilli grow more particularly in the lymphoid tissue of the intestine—for here is an interesting point to remember that the different bacteria of disease have their seats of election. Once they gain a footing in the body there are certain tissues in which they grow in greatest abundance, while at first they do not grow to any extent in other tissues, or in other words if they do find their way into the other tissues they are easily destroyed. But while the typhoid bacilli thus grow locally, if we take the fluid of the blood of a typhoid fever patient on the fifth day of his disease or so, we find that this now has new or greatly exalted properties. Although we dilute that blood 40 or 50 times, if we place in it some of the actively growing typhoid bacilli they become motionless and clump together in masses. The blood fluid has acted upon them. Nothing of this kind occurs in similarly diluted blood from one who has not had typhoid. What does this all mean? It means that during the course of the disease there is gradually developed on the part of the organism as a whole, the power of coping with and neutralising or destroying the micro-organisms of that disease. Something has developed, not locally but generally, which either was not there before or which now is developed in greater quantity than before. There is an adaptation to changed conditions. The body as a whole reacts and produces substances which tend to give it the advantage in the fight against its foes.

Need I remind you that the modern treatment of diphtheria makes use of this fact. We utilise the fluid of the blood of animals which have been inoculated with the diphtheria bacillus in order to give to the diseased human being antitoxic substances which those animals have produced, and produced in excess, in order to cope with the inoculated microbes. Where precisely these antitoxic substances are produced we are still engaged in determining. We know that the leucocytes produce one set, but the substance or substances which activate these and render them effective we know less about. Some are inclined to believe that the leucocytes also give origin to these. Recent evidence tends to

show that certain tissue cells—of the liver, brain, etc.—elaborate them. It may be that in tuberculosis the muscle cells play some part.

So now to return to the case of pneumonia. Let us try to translate what happens there. Through some lowering of vitality the tissues of the air sacs, which in health can destroy individual bacilli, finding an entrance into the lungs, are overcome and the bacteria multiply and set up disturbance. Then the second line of defence comes into action—not so much the lung tissue itself as the leucocytes which belong to the general circulation blood. They make their way into the damaged area, are unable to take up diplococci in sufficient numbers and destroy them; on the contrary, they themselves tend to be destroyed, and the diplococci continue to multiply. In the meantime the poisons from the diplococci have diffused out of the air sacs into the blood and so are carried all over the body, and with this we have the development of high fever. And now the cells of other parts of the body take up these less concentrated poisons or toxines and taking them up proceed to manufacture counteracting bodies which neutralise, or help in the process of neutralization of the poison, and once they start to do this they continue and produce more of the antitoxic bodies, so much in fact that the excess passes into the blood and from the blood passes into the damaged lungs until the moment is at last reached when sufficient of these antitoxic bodies are present there to reinforce the action of the leucocytes and with this all the diplococci are killed and recovery ensues. I say reinforce the leucocytes for the leucocytes are developed largely in the marrow of the bones and the later relays of young leucocytes have, before they reach the lungs, become accustomed and adapted to the bacterial poisons, and thus are much more powerful than the earlier drafts of leucocytes which passed into the lung. These, aided by the fluid of the blood, are effective, the former were not. Hence it is through the general adaption of the tissues in the organism and not merely through local efforts that the body overcomes infectious disease.

Once one realizes that it is all so clear, and, if I may express it, so very human—so like, for example, what happened in the Boer War. There we had local irritation in one part of that vast organism, the Empire; local efforts were unable to quell the disturbances, and war flared up and there was great local damage and arrest of the normal local activities. It looked as though the part might be completely lost. The effects of this local disturbance rapidly diffused through and influenced the whole Empire and, like the leucocytes, soldiers were drafted to the seat of the irritation from all parts of the organism, even from distant por-

tions like our own Canada. We contributed, as it were, from the marrow of one of the limbs. Those soldiers, at first unused to Boer methods of warfare, were at a great disadvantage and we had Nicholson's Nek and Colenso and other terrible disasters. But as the Boer methods became better understood our soldiers adapted themselves to them; the spirit of depression gave way to one of grim determination to overcome the enemy; more and more soldiers, contingent after contingent, from all parts of the Empire were collected and sent to the front. Supplies of all kinds were produced at a distance and poured into the focus of inflammation and at last the pathogenic organisms were completely overwhelmed and recovery ensued.

Now to apply all this to tuberculosis and its arrest. The disease, it is true, is of a different type—it is of slower development and more progressive character. To pursue my simile, if I may venture to do so without offence and without wishing to give offence, tuberculosis is to the human organism something like what Irish discontent is to the body politic. If we are healthy our first line of defence, the surface cells of the nose, mouth, throat, air passages and digestive tract can directly destroy occasional tubercle bacilli taken up by them; only if an excessive number be taken up are they killed by the bacilli. Healthy people that is can breathe in tubercle bacilli without harm resulting. That this occurs has been proved by examining the nasal secretion of nurses and students in tuberculosis wards and finding tubercle bacilli in the same, and I may point out the remarkable fact that in a well conducted tuberculosis hospital the nurses are found not to contract tuberculosis. They keep themselves in good condition.

The bacilli may get beyond this first line of defence into the lymph and blood and there may not cause any disturbance, being killed before they can multiply. Quite a number of cases are on record in which tubercle bacilli have been found in apparently healthy lymph glands showing no signs of tuberculosis. Again we can, for example, take two healthy young dogs and feed them with milk to which we have added a fair but not excessive number of active tubercle bacilli, and killing one of them two or three hours later, we can detect the tubercle bacilli in the lymphatic fluid draining away from the intestines. This is a process which, as I and others have pointed out, is constantly proceeding to a slight extent in connexion with the abundant bacteria of various kinds which people the intestines. Keeping the other dog for some weeks or months it may show not a sign of tuberculosis, and killing it at the end of this time we may not detect a sign of this disease in any region of its body.

But now, even if temporarily the general health is depressed, the history may be very different. The tubercle bacilli at the point of entrance, or it may be when they are carried into the circulating lymph or blood, are not necessarily destroyed. In many parts of the body they are, but if the organism possesses an Ireland—a region of constitutional weakness with poor circulation, and poor nutrition—if by chance the bacilli find their way into this, the cells cannot destroy them, but on the contrary they multiply, produce their poisons, killing the cells and developing a focus of inflammation—a tubercle. Such a region, as everyone knows, is the apical part of either lung. From its relationship to other parts there is there poor circulation and nutrition, and, added to this—although here remembering my simile, I must speak delicately—there may be something innate in the properties of the tissue cells themselves. Certain it is that here more particularly the tuberculous process may manifest itself.

A priori, one would think that the bacilli having once gained a footing in a part would continue to grow and spread from this focus, that growing their concentrated toxines would depress the vitality of surrounding cells rendering them an easy prey, so that, of necessity, once the disease was established in the system it would go on from bad to worse with progressive invasion, poisoning and destruction of the tissues throughout the body until a merciful death ended the scene. This does occur in some cases in which the tissues seem to have no resisting power, but as a matter of fact it is by no means necessarily or usually the case. Progressive invasion we know, is the exception, not the rule. As a matter of interest I looked last week through the records of the 139 post mortem examinations performed last year in my department at the Royal Victoria Hospital, and I found that while there were 18 cases out of the total, or 13 per cent. in which tuberculosis had assumed a progressive character and had surely been the cause of death, there were 41 cases, 29.5 per cent., or more than twice as many in which there was absolute evidence of old arrested or even healed tuberculosis (there were in addition three cases of progressing tuberculosis in which death was from some other cause.) The disease, as has been often stated before, is more often arrested in man than it is fatal, and the process in this arrest and healing must, from every consideration, be not so much by local effort as by the co-operation of the other tissues We have clear evidence that this is so. Just as in typhoid fever so here, it has been shown, more particularly by Courmont, that the blood and body fluids of tuberculous patients contain a substance not present in healthy blood, a substance which causes the clumping of the tubercle bacilli. And,

as pointed out long ago by Koch, if an animal has tubercular infection of one region, say the eye, the injection of virulent tubercle bacilli into another region at a distance, say the skin of the flank, leads it is true to a temporary local inflammation during which the bacilli are destroyed, but it is followed by no local development of the disease proper and by no extension from that region; a clear proof that under ordinary conditions the primary local development of the disease is accompanied by the development of increased resisting powers on the part of the rest of the tissues. Here again there is adaptation, by means of which these other tissues of the organism as a whole reinforce the local effort tending to produce so much antitoxic or anti-bacterial substance that at last the system overwhelms and arrests the local growth of the bacilli.

I have not seen this matter hitherto worked out adequately, and as I believe it is useful to present it to those interested in our work, even though at first hearing—being perhaps to some extent novel—it may be difficult to follow and fully grasp. Once grasped we grasp with it the whole rationale of the treatment of tuberculosis. Let us just glance at this.

First as to Koch's treatment by injections of tuberculin; that is, of the body juices and toxines of the tubercle bacilli. The basis of this treatment is clearly the carrying further of this natural process of stimulating the tissues in general to produce anti-bacterial substances by means of the circulating toxines. As we know by observation, outside the body of the individual tubercle bacilli do not produce much toxine; indeed it is only when they die or are destroyed that much poison escapes from them. Probably one of the reasons why tuberculosis tends to gain foothold in the body is that the bacilli are at once so slightly irritant and so resistant. As there is no extensive diffusion of toxines at the beginning of the process the rest of the tissues are not adequately stimulated; this especially when the body as a whole is in a low state of nutrition. By injecting these diffusible toxines we stimulate the cells in general to manufacture increased amounts of antitoxic substance and thus aid the local resistance. I put this purposely in a general way; to discuss this matter in the terms of complements and amboceptors and all the armamentarium of the modern bacteriologist, would utterly confuse, but this obviously is at base the rationale of the process.

But as all now know Koch's treatment is but partially successful. It is useless in advanced cases where the disease is extensive and where there must already be relatively abundant circulating toxines. To inject

more toxines into such cases is to poison rather than to stimulate the cells. In dealing with the treatment of tuberculosis there are two factors to be taken into account. You may take a horse to the water but you cannot make him drink. You may supply a cell with tubercle toxines which are necessary in order to stimulate it to produce antitoxines, but it may be so feeble that it will not react—will not produce these toxines. All its energies may be used up in the performance of ordinary everyday function. And here we have the basis of the modern treatment in which, as you know, we do not try to do anything specifically against the disease itself; on the contrary we leave the disease as such severely alone. But we do everything in our power to improve the general bodily condition. We enforce rest, so that the cells shall not be overcrowded and may have spare energy; we give abundant, easily assimilable food, so that they may build themselves up; we demand life in the open air with abundant oxygen and that toning up of the system, which the freshness and coolness of the air brings about more naturally than does anything else. For, just as a lax violin string will give no note, while, made taut, it vibrates to the slightest touch, so by improving the tone of the tissues in general they respond more immediately and more fully to the stimulus of the circulating toxines and produce the counteracting bodies which, developed in greater abundance and poured out into the blood, can now act locally on the tubercle bacilli in the areas of disease.

We in short do everything we can to help the body to adapt itself to the changed conditions, and this adaptation we know means also counteraction. The success of our modern treatment of tuberculosis—treatment, be it remarked, purely empirical in its inception and based upon no adequate theory of the modes of defence on the part of the organism, —this success is the strongest proof of the correctness of the conclusion reached along other lines, that recovery from infectious disease is not merely nor mainly a local reaction, but is a process in which the tissues not directly involved and the body as a whole take a most active part, becoming educated thereto during the course of the disease.

I have taken possibly too much of your time in discussing the moves on the part of the organism and have delved, it may be, too deeply for a general address. I would gladly think that my digging, if deep, has also been sufficiently broad in its scope to let in the light. Before closing some words must be said of that other matter, the moves made by the bacilli.

You must not look upon these producers of disease as fixed in their properties and unalterable; rather we have to realize that they also are

capable of adaptation. For us it is a fortunate fact that their power of adaptation is not so extensive and so rapidly developed as that of the healthy human organism. This we must take as another instance of the fact that union is strength. It may well be that the individual cells of the body have not the same power of adaptation as has the tubercle bacillus, but while the bacilli are isolated and independent, the cells of the body are united and co-operate and the sum of their reactive changes may well be greater than the adaptative changes possible in an isolated tubercle bacillus. Nevertheless bacteria are capable of great changes, suiting them to altered conditions of their surroundings. There is, for example, a large bacillus, the bacillus megatherium, first found, if I remember aright, upon the cabbage leaf; this is absolutely harmless for warm-blooded animals—one can inject these by the million into the rabbit without causing any recognizable disturbance,—but, as Vincent has pointed out, place some of these in a thin-walled celloidin capsule in the abdominal cavity of the rabbit, a capsule such that the fluid part of the lymph can easily penetrate through the walls and so afford nourishment to the bacilli, while the leucocytes and antitoxic bodies cannot enter—we find that after sojourning there for several weeks the bacilli have become accustomed to their surroundings so that now they will grow in the tissues of the rabbit without any capsule being needed. From having been perfectly harmless they are now pathogenic, and can set up disease.

What is to be said regarding the tubercle bacillus in this connexion? In the first place we may have the complete assurance that Adam was not created suffering from tuberculosis. The bacillus, we may be fairly sure, from living it may be on foodstuffs outside the body, accustomed itself first to living on the surface and in the passages of the organism as a harmless saprophyte, and only later gained the power of living not on but in the tissues, and from that moment it became pathogenic. This, it is true, must have happened centuries and centuries ago, for the disease was known to and well described by the early Greek writers on medicine. While this is so I do not think that we must imagine that the virulence of the bacillus has remained the same from that day to this; the probability is that were the ancient Greek to come to life again and mingle with us moderns his would be but a brief visit to this earth; he would be carried off by fulminating malignant tuberculosis in a very short space of time, if even before that the modern influenza bacillus, or the pneumonia diplococcus had not marked him for its own. I mean here, that the indications are that there has been a steady adaptation of

both organism and micro-organism, the one to the other; as the system has become more resistant, the bacillus has become more toxic. We have a parallel to what is here suggested in the remarkable history of the way in which the South Sea Islands were devastated by measles when that most puerile disease was first introduced by Europeans. We must suppose that measles originated in Europe and Asia at some period after the first natives found their way across to the South Sea Islands, or that the Aborigines did not carry it with them in their canoes when they colonized the islands, and so henceforth remained free. Probably it began as a mild disease, and as it became habituated to the human organism so did that organism become more resistant and the microbe increase in virulence *pari passu*; what continued to be a mild disease to Europeans therefore was most fatal to the Melanesians who had not undergone this progressive adaptation.

We have abundant evidence bearing upon this matter of modification in the virulence of bacilli by growth in the organism of one or other species; adaptation that is, to the surroundings whereby existence is rendered more sure. By the passage of a given pathogenic bacillus through a series of animals—by inoculating one animal of a species, a guineapig for example, with a feebly pathogenic microbe, then when the disease is at its highest taking some of the body fluids containing the germs and inoculating that into another guineapig, and from this again into another, and so on through a succession of a score or so—we can render the bacilli extraordinarily virulent so that whereas the disease in the first series ended in natural cure, at the end of the series the greatly diluted body fluids, diluted so as to contain only a few rare microbes, when injected may cause death in from six to ten hours.

By this artificial process bacteria adapt, and more than adapt, themselves to the organism of the one particular species; but this does not necessarily mean that they have adapted themselves at the same time to the conditions found in the organisms of other species. That may or may not be the case. An organism which by passage through a series of human beings has acquired greater virulence for man, may or may not gain increased virulence, say for oxen, and vice versa. On the whole the reverse is more often the case. As a matter of fact we have positive evidence that if we take two calves and inoculate them subcutaneously with equal amounts of cultures of tubercle bacilli, which have been gained from the cow and man respectively, the disease is very much more rapid in its progress, spreads much more rapidly and leads to earlier death when the bovine bacillus is employed than when the human strain has been used. This may be laid down as a general rule. Nay

more, if only a moderate dose of bacilli gained from man be injected, nothing more than a local nodule is produced in the inoculated calf; there is no generalization, and after a few weeks or months no signs of the tubercle bacilli are to be made out. In view of the Interim Report of the British Royal Commission on Tuberculosis, I would lay special emphasis upon this point. That commission has in quite a number of cases caused tuberculosis in cattle by the injection of human tubercle bacilli. Because disease can be transmitted experimentally by injection of a number of bacilli far in excess of the number which in nature could possibly gain entry at any one focus, it is by no means proved that under natural conditions these same bacilli are liable to cause infection. What the Commission should demonstrate in order to establish that human tuberculosis is dangerous to cattle, is that the minimum dose of human tubercle bacilli capable of setting up tuberculosis in cattle approximates to the minimum dose of bovine bacilli producing the like effect. This I am convinced is not the case. There may be examples of bovine infection of man in which the bacilli still retain the high grade of virulence for cattle, but everything indicates that these are the exceptions. So much so is this the case that Von Behring is now utilizing bacilli gained from cases of human tuberculosis to vaccinate cattle and prevent them from becoming infected from their fellows by means of the bovine tubercle bacilli. This is all now freely accepted; the opposite case remains still a matter of some debate, though the two parties are coming to take a more intermediate position. This matter was discussed very thoroughly by Dr. Ravenel in the address before this Association last year, and Dr. Ravenel, you may remember, took the position that tuberculosis is rather frequently conveyed to man from cattle. I still hold that such conveyance is not so frequent as is generally accepted. I have never from the first taken the position that it never occurs, but I still firmly believe that a tubercle bacillus which has passed from cow to cow for a long period, while it becomes more and more virulent for cattle, becomes less and less virulent for man, so that under ordinary conditions we have not so much to fear from milk and other products containing these bacilli, so far, that is, as the fully developed adult is concerned; but with weakly young children the case is different. They are susceptible, and if a large dose of tubercle bacilli be given to them in the milk, I firmly believe that even relatively slightly virulent bovine tubercle bacilli may gain entrance into their system in such large numbers that the cells are unable to kill them and that here and there they may gain a point of growth, and once they grow they may gradually adapt themselves to the human organism, and so set up the fatal disease.

I doubt if this necessarily occurs in all children; we have, that is, cases brought forward in which children have been fed upon milk of cows suffering from tuberculosis of the udder, without showing a sign of the disease. It must not be thought that I recommend that milk from tuberculous cattle should be drunk with impunity; it is simply repugnant in the idea that milk containing any form of infective disease should be used as a food. The fullest precautions should be taken and legislation developed to prevent the use of milk from animals suffering from any form of infective disease. Still, undoubtedly, the danger is there. Here I would only say that certain very interesting observations recently published support my view that the relative frequency of tuberculosis of the intestines in children must not be ascribed positively to drinking the milk of tuberculous cows; it may equally well be due to swallowing saliva containing breathed in tubercle bacilli, discharged into the air from the lungs of men and women suffering from the disease, or may have been sucked from the fingers after a child has been crawling on the floor. And these are observations by one of the greatest bacteriologists of our time, a man who first made pure cultures of the bacillus of tetanus and was one of the first to work out the antitoxine treatment in infections, the discoverer also of the plague bacillus, and that man is the great Japanese bacteriologist Kitasato.

Now-a-days we have a thorough and wholesome respect for the Japanese and his methods, and not the least for his thorough knowledge and practical application of bacteriology. The nation which has taken to heart the dictum "if preventable why not prevented," has applied bacteriological methods in the conduct of warfare, sending bacteriologists with each division, which has had the wisdom to recognize that *le Général Microbe* would be for her a far more powerful ally than Czár Nicholas's *Général Fevrier*, that from the experience of recent wars for every one Russian put out of action by shot, or shell, or bayonet, four would be invalided by pestilence and, accepting the warnings and advice of the bacteriologists, has managed to much more than reverse these figures in her own army; that nation and the bacteriologists of that nation deserve our respect. It is a recent paper by Kitasato that I wish to bring before you. In this, with a wealth of statistical data, he has shown that the deaths from tuberculosis in Japan are just about in the same proportion to the total deaths and the total population as are the deaths from this disease in European countries. There is in fact a remarkable similarity in his tables, suggesting very strongly that the factors at work are identical. In the second place, though here I confess his data might be fuller, he shows that in those under 18 years of age the number of

cases of evident primary intestinal tuberculosis is certainly not less, but on the contrary rather more than among Europeans and Americans, namely 30 per cent. of the total deaths from this disease, whereas in Europe of late there has been a rather remarkable consensus of observations giving the proportion at about 25 per cent. But, as I have already stated, it is usual to attribute these cases in early life to infection from cow's milk, while Von Behring goes so far as to attribute most human tuberculosis to this cause—the use of cow's milk in infancy. But now, says Kitasato, the use of cow's milk for feeding infants is unknown in Japan; if a mother is unable to feed her child a foster mother is employed. Singularly little milk is consumed in Japan and a careful calculation made from the total population, from a census of milch cows throughout Japan, and the average daily amount of milk yielded per cow, indicates that the individual Jap on an average consumes daily just about three quarters of a teaspoonful of cow's milk. Even in Tokio, the largest city, where most milk is consumed, the amount per individual works out to two and one third teaspoonful's.

Next it is shown that bovine tuberculosis is unknown among the native Japanese cattle, though by cross-breeding with imported European cattle they become infected. Experimentally, subjected to a severer test than is ever likely to occur in nature, a certain number can be given the disease. A few, very few, cases have been reported in which the disease has been notified as found in native cattle and this only in Tokio and Yokohama where most foreign cattle have been introduced and the so-called native cattle may have been of mixed breed; for, in accordance with Mendel's law a certain proportion of cross-breeds are likely to have the characters of the native sire or dam and to be distinguishable from the native race.

To epitomise; the facts gathered in Japan show that intestinal tuberculosis, which is as frequent there as in Europe, cannot be attributed to the ingestion of infected cow's milk, cannot therefore be of bovine origin, and the inevitable conclusion is that if intestinal tuberculosis is moderately frequent and not of bovine origin, then, similarly, a large proportion of the cases of European intestinal tuberculosis is in all probability not due to infection from milk. In other words, these observations support the view that I have maintained for the last six years, that undue stress is laid upon bovine tuberculosis as a source of human infection. The danger is there; do not let me be misunderstood, I am convinced that weakly children are susceptible to the disease conveyed through the milk of cows suffering from udder tuberculosis; only the

danger has been exaggerated. With Koch I hold that infection in the great majority of cases is from man to man and that our main efforts should be in the direction of preventing such infection.

This does not mean that I would restrict the legislation regarding tuberculous cattle. Far from it. These observations of Kitasato support what I have urged all these years, that it is possible to eradicate bovine tuberculosis independently of our efforts to eradicate the disease in man. Kitasato points out that so far as the chronicles of Japan extend back through the centuries they tell of the existence of human tuberculosis, and yet although the disease has been present all these centuries the cattle of the present day are not infected. If the human strain of bacilli easily adapt themselves to an existence in the bovine organism this could not be possible. This is another link to the chain of evidence which led me to urge in 1899, before the Canadian Medical Association and repeatedly since, that we in Canada should lead the world in completely banishing the disease from among our cattle. The disease is altogether too prevalent in European countries, for example, for this to be possible—the cost there would be too great. We are remarkably free from the disease; still it exists and its eradication is obviously a national and a provincial concern. We are told that the Federal Government hesitates to interfere in the prevention of human tuberculosis, not because they do not recognize that this is a work of national import, but because doing this they would be trespassing upon provincial rights, and the law is above the welfare of the people. But the health of animals has been from Confederation onwards, a matter both of national concern and of federal legislation. I would once again urge that it is for the Government to select some one well defined section of our country and there to root out completely the disease from among the cattle. Let them take Prince Edward Island, for example, appoint inspectors and be prepared to superintend the health of the animals on the Island for, say five years; let those inspectors make a census of all the cattle on the island, let them apply the tuberculin test and take over and compensate all reacting cattle; disinfect the byres and forbid any fresh animals to be landed without rigorous determination that those animals are free from the disease. I am convinced, first, that by the end of two years, if from the start they thoroughly entered into their work, the inspectors would find not a single case of the disease cropping up anew on the island. The disease, I say, only passes from animal to animal and not from man to animal under natural conditions, and if there are no infected animals to convey the disease no new case

can show itself. In the second place, the farmers would be benefited materially; no longer would they be subject to loss from the disease decimating their herds, and what is more, the certainty that their stock was free from the disease, would enhance the value of that stock and afford a market for it for breeding purposes, not merely at home but in distant countries which despair of obtaining uninfected animals, their own stock being so riddled with tuberculosis. And lastly, the experience gained in eradicating the disease in one locality, would show how it can be accomplished most economically and surely in other parts and eventually throughout the whole of the Dominion, so that Canada, our Canada, would stand before the world as the first country to solve the great problem and to possess stock wholly free from this devastating disease, so ruinous to agricultural communities throughout the world.

This is no chimerical plan; it is a perfectly feasible experiment, assured of success from the first, causing little disturbance and capable of being carried out at no great cost. If the Government has not merely the fear of the provincial politician before its eyes but possesses a statesman-like foresight, if it has the welfare of the community at heart, the well-being of this Canada of ours, then I urge that it take up this work; that it make a forward move fraught with advantage to what is by far the greatest industrial interest in the country, even if it fears to take up measures for the benefit of the greatest national interest of all, the health and the well being of the people.

SOME PATHOLOGICAL CONDITIONS OF CLINICAL INTEREST ASSOCIATED WITH MOVEABLE KIDNEY.

BY

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In studying a series of cases of moveable kidney one is struck by the number of symptoms present, which are referable to other organs; so much so that there is oft-times difficulty in diagnosing correctly the true condition. Many of these associated pathological conditions are found to be due, more or less directly, to the moveable kidney itself, and in a large series of cases almost all abdominal conditions may be represented. In a series of 61 cases of moveable kidney at the New York Presbyterian

Read before the Montreal Medico-Chirurgical Society, March 17th, 1905.

Hospital there were the following associated conditions: Femoral hernia, 2; gastric symptoms, 25; marked constipation, 28; diarrhœa, 3; jaundice,1; chronic appendicitis,9; urinary symptoms,18; renal colic, 7; calculus, 1; pyelitis, 1; chronic nephritis, 2; neurasthenia, 11; general enteroptosis, 3; uterine abnormalities, 5.

In face of such an array of associated conditions it seems worth while taking up several of these with a view to showing how a loose, moveable kidney can, by pulling on its peritoneal and other attachments, affect organs more or less distant from it; and, at the same time, try to get a true idea of the frequency of this condition as an etiological factor in the production of many symptoms not usually attributed to it, which might be benefited by fixation of the kidney. Landau claims that 50 per cent. of moveable kidney cases have associated conditions, such as hernia, retroversion of the uterus, enteroptosis, etc. Edebohls claims that 60 per cent. of chronic appendicitis cases are associated with a moveable right kidney as an etiological factor, and that in 80 per cent. or 90 per cent. of women with moveable kidney there co-exists appendicitis. While these are, in my opinion, rather sweeping statements, they are made by men who have large experience.

Pathological conditions associated with moveable kidney may be either (1) those affecting the organ itself; (2) those due to its influence on other organs because of its mobility. In the first group we have temporary congestion of the kidney due to traction on the blood vessels at the hilum, and occasionally perhaps to compression of the organ between the last rib and the vertebral column. Or, again, we find a kinking of the vessels and ureter by rotation of the kidney on its axis, producing renal paroxysms, the typical Dietel's crisis, a condition at times closely resembling strangulated hernia. Often there is extreme pain with hæmaturia, casts and albumin in the urine, and sometimes temporary retention of urine. In mild degrees of moveable kidney hæmaturia and albuminuria are slight and of but temporary duration. When severe and continuous it will be found that some pathological condition exists in the kidney itself e.g. calculus or tuberculosis. In many cases it has been noted that a condition of polyuria exists, accompanied by frequent straining efforts at micturition. The free flow of urine following the attacks of "renal crisis" is well known, but many cases show polyuria continuously. In cases of some standing, where the ureter is frequently kinked, a condition of hydronephrosis is produced, relieved only by nephropexy, and that, too, only when done early. For, if the trouble be too long continued, a cystic, useless kidney is the result, necessitating

complete removal. Such a case I operated upon in 1901, and I herewith present a short abstract of the case report.

W. H., drug clerk, aged 28, was referred to me by my colleague, Dr. Blackader, at the Montreal General Hospital. For years he had suffered from attacks of intermittent hydronephrosis of the right kidney. A large tumour would appear in the position of the right kidney, associated with pain, chills, fever, and vomiting. After a variable lapse of time, the patient would get relief by passing very large quantities of pale urine, and the tumour would rapidly subside. The kidney, in the intervals between these attacks, could be palpated, and was found apparently enlarged and fairly moveable. We decided to do nephropexy, thinking that thereby we might prevent the kinking of the ureter which was judged to be the cause of the trouble. This was done, and a somewhat cystic kidney was fixed after Edebohls' method. To our disappointment, this did not effect a cure, and one year subsequently, at the patient's request, I removed the kidney entirely, and found that although the kidney had remained firmly fixed where it had been stitched, the ureter, just below the pelvis of the kidney, was kinked and held so by adhesions,—very much as we often find to be the case in the appendix vermiformis. The kidney, moreover, had become so cystic as to be practically useless to the patient, who has been quite well and working steadily ever since he recovered from the operation for nephrectomy. Such cystic kidneys and infective conditions of pyuria, pyelitis, and pyonephrosis are late results usually of long standing cases. Vesical irritability is a symptom noted in some cases.

Associated conditions in the gastro-intestinal tract are extremely common with a moveable right kidney. Glénard is quoted [2] as stating that 2.7 per cent. of men and 22 per cent. of women with gastric and visceral troubles have moveable kidney. Glénard claims that moveable kidney is only one factor in a general splanchnoptosis, and that the low level of the liver, stomach, spleen and other viscera seen in cases of moveable kidney are only evidences of the same condition (Glénard's disease). Ewald, Morris and most other writers do not agree with this statement, and it has been pretty conclusively shown that the increased size of the foramen of Winslow, the altered level and size of the stomach and duodenum, are frequently directly due to the traction exerted by a kidney in its descent. Bramwell,[3] by a study of a case *post mortem*, shows that the kidney does not slide down under the peritoneum, forming a sub-peritoneal channel as many writers claim, but that it pulls down the peritoneum with it, forming a meso-nephron, and that the superior peritoneal reflections up over the pylorus and duodenum,

and those inwards over the inferior vena cava and aorta are finally elongated into distinct bands, which press upon and constrict the underlying structures. In this connexion a full study of the anatomical relationships of the right kidney, duodenum, pancreas and other structures in this region is to be found in a splendid article by Brown [4] published in the *Philadelphia Medical Journal* in 1903, in which he describes the so-called duodenal ligaments. The ligamentum hepato-duodenale passing from the hilum of the liver to the first part of the duodenum (edge of lesser omentum) is the upper one; then from the neck of the gall-bladder to the superior curve of the duodenum the ligamentum cystico-duodenale brings this viscus into relation with the duodenum; while at a lower level the ligamentum duodeno-renale connects the superior curve of the duodenum to the upper pole of the right kidney. In the condition of moveable kidney the stretching of these folds of peritoneum will at once alter the normal position of the duodenum and (as in Bramwell's case [4]) produce duodenal obstruction, spasm of the pylorus and an extreme degree of gastric dilatation (in this case proving fatal). The "gastric crises" seen associated with moveable right kidney are to be frequently explained by such traction and temporary obstruction of the duodenum. It is well known that women with this affection suffer frequently for years with "chronic dyspepsia," varying from occasional bilious attacks to severe attacks of vomiting and nausea, abdominal distension, colic, tenderness over the epigastrium, even rise of temperature and symptoms of collapse. The very frequent condition of obstinate constipation, amounting at times to almost complete obstruction, may possibly be directly due to the interference with the functions of the duodenum and of the hepatic flexure of the colon by the moveable kidney, as well as to interference with the flow of bile through the common duct into the duodenum. At the same time it is not uncommon to find attacks of diarrhœa in such cases. Hæmatemesis has been observed in cases of gastric trouble, associated with right moveable kidney, and probably was due to a circulatory disturbance depending upon venous obstruction, as the symptom disappeared after nephropexy was performed. The symptoms of general enteroptosis found in many cases show a similar disappearance after fixation of the kidney, and Morris[5] shows that hepatoptosis may exist without nephroptosis, which goes to disprove Glénard's original conception of the condition, as found in his "Les Ptosis Viscerales."

Edebohls, [6] in an exhaustive paper, published in the *Annals of Surgery*, 1902, draws attention to the co-existence of disturbances in the gall bladder and biliary passages, associated with, and often due to, right

moveable kidney. A case in my service at the General Hospital last summer furnished a good illustration of this, and I have had two other cases somewhat similar.

The notes of this case are as follows:—M. B., aged 47, unmarried, consulted me first about twelve years ago for pain in the right loin, with associated dyspeptic symptoms. I found a freely moveable right kidney. Her circumstances did not permit of any operation at that time, and I am not sure that I advised it then. I saw her from time to time, and no mechanical belt or truss relieved her trouble, though they were tried faithfully. As the years went on, I urged the operation of nephropexy, but care of sick relatives prevented. In the meantime, she had two slight attacks of jaundice, associated with symptoms of cholecystitis. In the winter of 1903 I did a nephropexy, hoping thereby to prevent further interference with the gall-bladder. The recovery from the nephropexy was without incident, and she remained well for three months, when she had another attack—more severe than the former—of cholecystitis and localized peritonitis, with jaundice, vomiting, etc. This attack subsided, but was soon followed by another, and in the following spring (1904) she again came into the hospital, and I cut down upon the gall-bladder, which I found attached firmly, at its fundus, to the transverse colon and pulled well forward in extreme anteflexion. With considerable difficulty I separated it, and opened and drained the gall bladder, fixing it up to the drainage opening in the anterior abdominal wall by stay-sutures, as I usually do. The wound healed as usual and the patient has since been in perfect health. The kidney, I found at the second operation, still firmly fixed. I have no doubt that here the repeated attacks of cholecystitis were due to the moveable kidney, which had been sutured up too late to prevent the gall-bladder trouble. Litten, in 1880, reported a case of moveable kidney with frequent attacks of deep jaundice; Urag, one with adhesions between the transverse colon and the gall-bladder; and many other observers have found conditions varying from temporary attacks of jaundice to cholelithiasis and obliteration of the gall-bladder, due to a moveable right kidney. There are those who maintain that when the two conditions co-exist, the gall-bladder is the primary trouble; but Roux, Morris, Tulpius and others have reported cases of gall stones, or inflammatory and obstructive conditions of the biliary tract, which have disappeared on fixing the kidney.[7] Morris, in 1895,[8] drew attention to the fact, that direct pressure by a moveable right kidney on the duodenum just below Vater's diverticulum, associated with the traction of the peritoneal ligaments on the bile ducts, will certainly give conditions which produce gall-bladder troubles. It

is not admitted that the kidney can press directly on the bile duct, though cases of adhesion between the kidney and the gall-bladder are reported. An instructive case is reported by Jonathan Hutchinson, Jr., [9] of severe cholecystitis with jaundice in which this was supposed to be the only trouble, but at operation, a moveable kidney was found and subsequently anchored after the obliterated gall-bladder was removed. All symptoms were absent after nephropexy. In a second case, with jaundice, the gall-bladder and ducts were examined and found normal, and following the kidney-fixation all symptoms disappeared. Dr. Shepherd, of Montreal, cited a similar case. Hutchinson concludes that the symptoms of biliary trouble may be due to any of three conditions induced by the moveable kidney, viz.: I. Downward displacement of the third part of the duodenum with stretching of the common bile duct. 2. Displacement of the gall-bladder and sharp kinking of the cystic duct (as in the case I have cited). 3. Torsion of the vertical portion of the duodenum and perhaps even of the bile duct.

Edebohls seems to have been one of the first to call attention to the associated condition of recurrent appendicitis, and certainly lays more stress on a moveable right kidney as an etiological factor in such cases than any other writer, and demonstrates the facility with which the appendix may be examined and removed through the same incision by which the kidney is reached in nephropexy. In a large series of cases he found that after renal fixation the symptoms of appendicitis disappeared, (twelve out of 58 cases) without appendectomy being necessitated. I have had two such histories in the past three years: both women, unmarried, who had repeated attacks of apparently catarrhal appendicitis, so severe that both had been threatened with operation. Removal of the kidney trouble appears to have cured the appendix condition in both. Edebohls shows that the traction of a descending kidney leads to pressure on the superior mesenteric vein, where it crosses the duodenum, giving rise to a passive venous congestion of the cæcum and appendix, thus predisposing to the condition of chronic degenerative changes in the latter organ. W. J. Martin [10] also believes that a right moveable kidney is a "most frequent cause of appendicitis," and claims that in 200 consecutive cases of appendicitis he found a moveable kidney in 36.5 per cent.

That glycosuria is more or less dependent at times on a moveable kidney is demonstrated by the results of fixation of the kidney. If one thinks of the close proximity of the duodenum to the pancreas, the duct of which would be influenced by the same conditions as those acting on the common bile duct, and the result of kidney traction on the descending

portion of the duodenum, it is easy to see that degenerative and inflammatory changes of various kinds might be induced here by a moveable kidney.

A. Gilbert and Lereboullett [4] have reported cases of glycosuria, one showing 10 per cent. sugar, and associated with moveable kidney and evidently directly due to this, as the urine was free from sugar after nephropexy was done. In two of these the liver was hypertrophic, in the other it was enlarged, probably from tuberculosis. Jonathan Hutchinson, Jr., also quotes a case of temporary glycosuria, amounting to eight grains of sugar to the ounce, completely cured by fixing the kidney.

Of the nervous manifestations all grades are frequently seen, from neuralgia of an intercostal and lumbar type to acute paroxysms of pelvic pain and sciatica. The association between various functional neuroses and hysterias and moveable kidney is only too well known to every practitioner and unfortunately here, as in epilepsy, we may remove the original exciting cause—the moveable kidney—yet the nervous disorder goes on much as before. Earlier operation is called for in such instances, I think. The close connexion of the various abdominal sympathetic nerve centres explains the remote reflexes produced by an alteration in the relationship of one of them, viz., the renal plexus. The aortic, hypogastric, ovarian and uterine plexuses are often responsible for the various pains experienced by the unhappy owners of a wandering kidney. In this way the frequent exacerbation of symptoms during a menstrual period in a patient with a floating kidney may be explained. Goelet [11] draws attention to the large number of cases applying for relief for pelvic troubles who are relieved of their symptoms on wearing a proper kidney belt or after nephropexy. He explains the congestive conditions of the pelvic viscera as due to interference with the ovarian vein by a low lying kidney. Riedel, Morris, Edebohls and others also emphasize the importance in gynæcological cases of a careful examination of the position of the kidneys.

In this paper I have used synonymously the terms "moveable," "wandering" and "floating," as applied to the kidney. I had to do so, because writers do not agree upon a definition of these terms. Of course the more moveable the kidney becomes the more likely it would be to produce the symptoms I have referred to. As regards these terms, see Morris, "Surgical Diseases of the Kidney and Ureter." Vol. 1, p. 95. I am much indebted to my clinical assistant, Dr. C. K. P. Henry, for valuable assistance, in the preparation of this paper.

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MICROPHTHALMUS: PERSISTENT PUPILLARY MEMBRANE: ANTERIOR SYNECHIA AND CENTRAL OPACITY OF THE CORNEA.

BY

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Cases of persistent pupillary membrane are far from rare, but the conditions found in the case which I report are decidedly uncommon.

The patient, a young man of 26 years of age, first came to me in order to have his left eye straightened, the eye at this time deviating upwards and inwards. On close inspection of the eye I found the following conditions:—

The eye ball itself was of the microphthalmic type, being 24 millimetres in diameter in its horizontal meridian. A rather dense gray opacity occupied the central portion of the cornea extending in all directions to within about 2 mms. of the edge of the cornea, which peripheral portion of the cornea was quite clear. The cornea measured 10 mm. in the vertical diameter and 11 in the horizontal, and the opacity measured 5 mm. vertically and 6 horizontally, there being 2 mm. of clear cornea around the opacity. The opacity was densest towards the central and lower portions and thinned off towards the superior edge. It was not evenly gray but had numerous small areas of lesser density, producing rather the effect of mesh work. The periphery of the opacity was irregular in shape there being numerous little projections from the edge of the opacity: from these, little strands of grayish tissue extended backwards to the subjacent iris to which they became adherent in the region of the circulus iridis minor. There were about 10 of these strands extending from the lower and inner portion of the opacity and two or three from the upper and inner, there were none attached to the upper and outer portion of the opacity. Where these strands became adherent to the cornea they sometimes spread out as it were into several roots or branches, other strands could be seen lying over the iris, which projected loosely out over the pupillary edge.

The pupil was active to light and accomodation. The lens was clear. Owing to the position of the opacity it was difficult to get any view of the fundus; however, after dilating the pupil with homatropin I was able to get a fairly clear view of the disc and surrounding retina. The disc was very white and atrophic looking and in addition it was deeply cupped. The vessels were forced over to the nasal side and it had all the appearances of a case of simple glaucoma, with which the field of vision coincided. The vision was limited to counting fingers at a distance of 12 inches to the temporal side of the field, but to the nasal side of the field there was little or no vision; colours could also be perceived (except green), in the temporal side of the field. The cornea over the opacity was quite regular, smooth and glistening, the opacity being distinctly limited to its posterior layers. No alteration of vision had been noted for years. The tension was normal. This condition had existed from birth, there had never been any inflammation of the eye. The right eye was normal in every respect.

There are two explanations as to the origin of this condition, one being that the pupillary membrane in the fœtus had become adherent to the posterior surface of the cornea as the result of an inflammation. It has been supposed that in some cases there has been an intrauterine corneal inflammation with or without perforation, and with a temporary obliteration of the anterior chamber which caused the synechia, but it certainly does not account for all cases. There have been a few reported, in which like mine, there has been no sign of such perforation, and a large piece of persistent pupillary membrane attached the iris to the cornea.

Secondly, defective development is due to the posterior layers of the cornea and the pupillary membrane being of the same embryonic origin, when the anterior chamber had begun to form in fœtal life; separation of these two membranes had not taken place at the centre. Also, according to Trencher Collin's theory, which I will later describe, this membrane may block the canal of Schlemm and the filtration angle of the anterior chamber, thereby producing a condition of simple glaucoma, which may progress to a certain stage and then come to a stand still.

The embryological explanation of the condition we have before us cannot be better described than in the words of Dr. Trencher Collins. According to him, before the appearance of the iris in the fœtal eye, that portion of the epiblast which forms the lens is cut off from the cuticular epiblast by the ingrowth of the mesoblast. This mesoblast is divided into two layers, the posterior forming the anterior fibro-

vascular sheath and the anterior forming the substantia propria of the cornea and Descemet's membrane. At this time there is no anterior chamber and the lens is separated from the cornea by the anterior fibro-vascular sheath alone, which is in contact with both. As the iris grows out from the ciliary body it carries in front of it the prolongation of the posterior fibro-vascular sheath, which goes to join the anterior, which insinuates itself beneath the anterior sheath and raises it up from the surface of the lens. The sheath ultimately becomes united to the iris, whose anterior layer it forms, while that portion filling the pupil beyond the edge of the iris takes the name of pupillary membrane. As the eye grows this membrane normally stretches and splits up, finally disappearing, but occasionally it remains in part persistent and may be seen proceeding from the corona of the iris to the lens capsule and then to the back of the cornea. When the aqueous is secreted the lens begins to flatten, the cornea and the iris separate unless there should be a failure of the normal complete absorption of the bands between them.

Cases are reported in which adhesions passed between the iris and the ligamentum pectinatum, in others the adhesions were rather nearer the periphery of the iris and were adherent to the back of the cornea, which was perfectly clear. In others the iris was adherent in its upper part to a clear cornea and in some posterior synechia also existed, but there was no round celled infiltration in any part of the uvea and the anterior fibro-vascular sheath here appears to have been unable to separate from the cornea.

Collins explains the improvement that occurs in some cases with advancing age by the hypothesis that the ligamentum pectinatum appeared to have been stretched by the growing eye until the angle had become widely open. This would explain in the present case the existence of the simple glaucoma and also the fact of its having remained partial. In other cases in which there has been less power of the globe to retain its natural dimensions under pressure, there would be buphthalmia.

Hippel holds that the inflammatory theory accounts for most cases, for since we have a perfectly formed iris, the failure of separation of the mesoderm into its two layers cannot be considered; however, in the cases which he mentions and were observed by Nossius, the opacities were situated at the periphery of the cornea over the iris, while in mine the opacity occupied the centre of the cornea.

Stationary corneal opacities are quite frequent in microphthalmic eyes, and vary in form, some being peripheral and sickle-shaped, but

more frequent than these, are those in which there is congenital parenchymatous diffuse gray white opacity, which sometimes covers the entire cornea, giving it a porcelain-like appearance, which may be sometimes limited to the central portion of the cornea. Almost invariably in these cases there is a certain degree of clearing up of the opacity beginning at the periphery and extending towards the centre, which occasionally may be complete. In quite a number of these cases the cornea was at the onset found to be enlarged and distended not unlike keratoconus or keratoglobus, after the cessation of the disease processes lying at the bottom of this trouble.

Hippel has found in a case which he describes that the cornea in time assumed a normal size and curvature with but a slight corneal opacity. In some cases this opacity can persist with much density, or finally permanent increase of tension may persist with an abnormally deep anterior chamber and excavation of the disc, being the condition of hydrophthalmus. These parenchymatous congenital corneal opacities exist in the posterior layers of the cornea only. If we have only a simple opacity, there is merely a lesion of the endothelium but with the enlargement and ectasia of the cornea there is likely an ulcer of the posterior surface of the cornea, this latter having been anatomically proven in one case. Hippel considers these opacities all to be due to an intrauterine inflammation and not to defective development of the eye.

CASE OF CONGENITAL ABSENCE OF THE VAGINA AND UTERUS: ARTIFICIAL VAGINA: SUBSEQUENT OPERATION FOR APPENDICITIS.

BY

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Montreal.

Miss S., 21 years of age, consulted me about a year ago, because she had never menstruated. She was engaged to be married, but thought it wiser to find out the cause of the amenorrhea, before doing so. She was a healthy-looking girl, medium height, very good complexion, well developed bust, normal appearance of external genitals, soft voice—in fact there was nothing about her appearance or manner to indicate that she was different from any other woman of her age.

On examining her, I found that there was no appearance whatever of a vagina, although the greater and lesser lips and perineum appeared normal. I took steps to prepare for a rectal examination, and, a few

Read before the Montreal Medico-Chirurgical Society, 7th April, 1905.

days later, this was made, when it appeared evident to me that there was, not only no vagina, but no uterus either; but there was one ovary on the left side, and I thought I could feel a tube there. I was quite sure that there was no ovary and tube on the right side.

At her request, I informed her intended husband of her condition and of my intention to attempt to make an artificial vagina, of which, however, I was somewhat doubtful. He informed me that he wished to marry her, in spite of the defect.

She was admitted to the Samaritan Hospital 13 months ago, and, in the presence of several members of the staff, I carefully dissected the tissues lying between the rectum and bladder, taking care not to enter either of these organs, by having a sound in the bladder and a finger in the rectum. With the scalpel and my fingers, I pushed the bladder and rectum apart, there being nothing but cellular tissue between them, until my right index finger could be introduced to the distance of four inches. This space was packed with several yards of sublimated gauze which was changed from time to time. She made a good recovery from this little operation, and, before leaving, I had her wear a glass tube to keep the granulating surfaces apart.

She left the hospital in about three weeks' time and came occasionally to see me, when I found the artificial vagina smaller and shallower than at first. This operation, of course, did not help her fault of menstruation, and, soon after, she began to suffer a good deal with what I thought was menstrual pain. It was, however, worse on the right side; she also had some pain at the pit of the stomach, and occasionally would have bilious attacks, when she would feel nauseated. She was also subject to rather severe headaches. I thought most of the pains, of which she complained, were due to the efforts of nature to have a menstrual flow. She was suffering a little all last summer, especially from pain in the right side when she worked hard. This autumn, about the middle of November, she was taken very ill with pain and vomiting, and, at the same time had quite a very severe bleeding of the nose. She was so ill, in fact, that her mistress had to be up all night with her.

Next morning, when I was called, it was evident to me that she was suffering from appendicitis, and I at once sent her in the ambulance to the Samaritan Hospital, with the intention of removing the appendix at once, by a median incision, so that I might, at the same time, verify my diagnosis of a year ago that there was no uterus or vagina. On searching for the appendix the cæcum, the omentum and the small intestine were found, matted together in the appendix region; so that it was quite difficult to detach them during this proceeding. The hæmor-

rhage from the raw surfaces was very free, but was eventually stopped by the application of hot gauze sponges. At last the appendix was found, surrounded with pus, which was wiped away; but when the appendix was being dug out of its bed of adhesions, it came away in several pieces, without, at first, my being able to find its insertion into the cæcum. This latter was gone over several times, and, at last, a place was found a little thicker than the rest, and, on passing a probe along it, an opening was found, leading into the bowel. With the help of the probe and the fingers, this stump, about an inch long, was separated from the cæcum, and cut off even with the latter; the hole in the cæcum being treated as a bullet wound, with two layers of Lembert's sutures, the first taking in the muscular layer but not the mucous membrane, and the second covering over the first with peritoneum.

I was inclined to introduce a drainage-tube, on account of the large amount of raw surface, but by packing in some hot sponges, the oozing eventually stopped, and I decided to close up without drainage. Before closing it, however, I had a good opportunity of verifying the abnormal condition of the pelvic organs. There was no uterus or vagina, and no right tube and ovary, but the left ovary was normal in size and appearance, and the left tube was normal at its fimbriated end, but terminated at its proximal end in a little club-shaped knob. The arrangement of the peritoneal folds, which generally form the broad ligament, was worth noting. On the right side it came from the pelvis to the bladder and abdominal wall. On the left side, it formed an ordinary broad ligament, in which ran the tube, not transversely, but diagonally downwards, that is to say, the fimbriated end of the tube was at its usual level, but the uterine end ran down to where the vagina ought to have been, and ended there. There was no broad ligament on the right side.

There are a few points of interest in this case, the one of greatest practical importance being that this girl was under my observation several times, at intervals during the year from her first operation, complaining of bilious attacks and pains in the pelvis and pit of the stomach, and suffering from constipation, without my recognizing the presence of appendicitis.

The second point is the importance of examining any patient who has suffered from some long-standing abnormality of the menstrual function.

The third point was the profuse epistaxis, which, combined with the temperature of 102° and the pulse of 120, might easily have led a physician who saw the patient for the first time, to suspect typhoid fever, especially as there was marked tenderness in the right iliac region.

The fourth point is that, in appendicitis, the pain is often, at the beginning, situated in the epigastrium, and even in other parts of the abdomen, rather than at Macburney's point, where, however, it eventually ends up by locating itself.

The patient has made a very satisfactory recovery, her appetite and digestion being better at the end of a week than it had been for several years past.

AN UNUSUAL CASE OF THYROIDECTOMY.

BY

FRANCIS J. SHEPHERD, M.D., C.M.

Surgeon to the Montreal General Hospital.

The following case presents operative conditions which I have never met with before, and therefore I considered it sufficiently interesting to bring before this Society. The following is a short history of the case:—

Annie C., aged 38, unmarried, was sent to the Montreal General Hospital by Dr. Molson, November 23rd, 1904, for operation for greatly enlarged thyroid. Twelve years before she first noticed that her throat was somewhat enlarged, and that she had at times difficulty in swallowing. Since that time the throat has steadily increased in size, chiefly on the right side. Two years ago the growth of the tumour became much more rapid, and swallowing at times was very difficult. When she got excited, or over-exerted herself, she had difficulty in breathing—otherwise she was perfectly well.

On examination, both lobes of the thyroid gland were found to be enlarged and also the isthmus; the enlargement was greater on the right side. The whole swelling formed a tumour of firm consistence and smooth surface. In the base of each lateral portion a hard nodule could be felt. The tumour did not give one the impression of vascularity. Temperature and pulse were usually normal, the latter about 70. There was no appearance of exophthalmos. The chief reason for wishing operation was the difficulty in swallowing, and the occasional breathlessness on exertion. She seemed in perfect health, and all her organs, as far as could be made out, were normal.

Operation.—November 29th, 1904.—Anæsthetic of equal parts of ether and chloroform was used, and it was taken without any trouble. After the usual cleansing of the site of operation, an incision was made along the inner border of the right sternomastoid muscle for about five inches, and the gland was uncovered. The upper end of the right lobe,

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Read before the Montreal Medico-Chirurgical Society, and case exhibited March 17th, 1905.

which extended very much higher than normal, was exposed by extending the incision, and the superior thyroid artery was tied and cut. The next step was to deliver the right lobe. This, at first, could not be done, for it seemed adherent everywhere, and to a much greater extent than it appeared externally to be. The trachea, although not compressed, was shoved over to the left side, and the œsophagus, with the thyroid closely adherent to it, was lying outside the trachea. The right lobe was then, after severing all the adhesions, delivered and the recurrent nerve looked for. It was found imbedded in the gland, and had to be carefully separated; the inferior thyroid artery and middle thyroid veins were tied. The whole gland was removed in one mass without separating it at the isthmus, the left lobe being treated in an exactly similar way to the right through the same incision. The nerve on the left side was not clearly identified, though I was certain it was not cut.

The patient stood the long operation very well. After the gland was removed, the many adhesions gave rise to some bleeding, and many points were tied. As the wound was being closed, I noticed a sharp bleeding on the right side of the trachea, which I immediately arrested with Pean's forceps. At once the respiration, which had previously been quite quiet, became stridulous, and the face became congested, as if there was an obstruction to the breathing. The forceps were at once removed, and it was seen that the main nerve had not been interfered with. The breathing became somewhat better, and the wound was closed and dressed, and she was sent to her ward. The stridor of the breathing being still a feature, respirations 30, pulse 140, I gave directions to Dr. Campbell, the medical superintendent, that, if, in a quarter of an hour, she still had stridulous breathing and continued cyanosed, he was to do tracheotomy. This he did to the great relief of the patient and the ward. Before performing the tracheotomy the larynx was examined, and the cords were found to be spasmodically closed, and no intubation could be satisfactorily performed.

The next day the patient was very well, though she had difficulty in swallowing, and closure of the orifice of the tracheotomy tube by the finger caused complete cessation of respiration. Several attempts were made to examine the larynx, but failed, the parts being so sensitive. A week after the operation she could speak in a whisper, when a finger was placed on the opening of the tube. Eleven days after operation the tube was coughed out of the wound, and as she breathed quite well it was not reintroduced. From this time forward recovery was rapid, and as the wound closed she breathed without difficulty through the mouth, spoke plainly, with good though altered voice. About the 24th of December she was discharged apparently perfectly well.

On speaking about the case to Dr. Birkett, and discussing the cause of the condition which came on after operation, he suggested that perhaps one of the nerves was paralysed partially or wholly before operation, and that, probably, the nerve to the abductor muscles being caught by forceps, the adductus closed the rima glottidis. I sent her to Dr. Birkett for examination, and he found that the left cord was paralysed, and, from its rounded appearance, and for other reasons, he concluded that the paralysis was of long standing, also that the right cord had not yet completely recovered. This confirmed the surmise made soon after the operation. The position of the œsophagus also explained why swallowing was difficult.

There is no doubt that the left cord was paralysed at time of operation, and that the forceps at the end of the operation seized the nerve going to the abductor muscles, and caused a closure of the cords by the unopposed action of the adductor. It teaches us one lesson, that is, always to have the larynx examined before operation. I had a case of a woman quite recently where an operation had been performed on the left side three years ago, and the growth of the right thyroid had continued steadily until, when I saw her, she had stridulous breathing and great breathlessness on exertion. Laryngoscopic examination revealed a paralyzed left cord. In this case, not wishing to remove all the thyroid, and knowing that the left nerve was partially paralysed, after tying off the inferior thyroid artery, I delivered the tumour, tied the inferior thyroid artery, and then enucleated the diseased tissue, without any hæmorrhage, and without injuring the recurrent nerve. The shell of gland was replaced and the wound closed; by this means sufficient gland was preserved to avoid any risk of myxœdema, and there was no chance of injury to the nerve.

THE JUBILEE OF LARYNGOLOGY.

BY

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To-day in London there is being celebrated what one may regard as a unique occasion, namely, the Jubilee of Laryngology, and the one hundredth birthday of one who is, practically speaking, the inventor of the laryngoscope; and it occurred to me that a few words upon this subject might not only be of some little interest to you as regards the

* Read before the third and fourth year classes of the Medical Faculty of McGill University, 17th March, 1905.

history of the instrument, and of the man whose name is so intimately associated with its invention, but also appropriate to the occasion.

The idea of examining the cavities of the human body is of ancient date, but the development of it was slow, and the result imperfect. The first attempt was made by Philip Bozzini, of Frankfort, in 1807, who devised an instrument to examine the larynx. This instrument consisted of a tube divided in the centre into two compartments, one of which was a mirror, so placed as to reflect the light downwards. The object of this division was to transmit the rays of light from the illuminate source, and the other to receive the rays of light reflected from the examined object. It seems strange in these days that it was thought necessary to attempt to shut off the reflected rays in order to be able to see the part under examination.

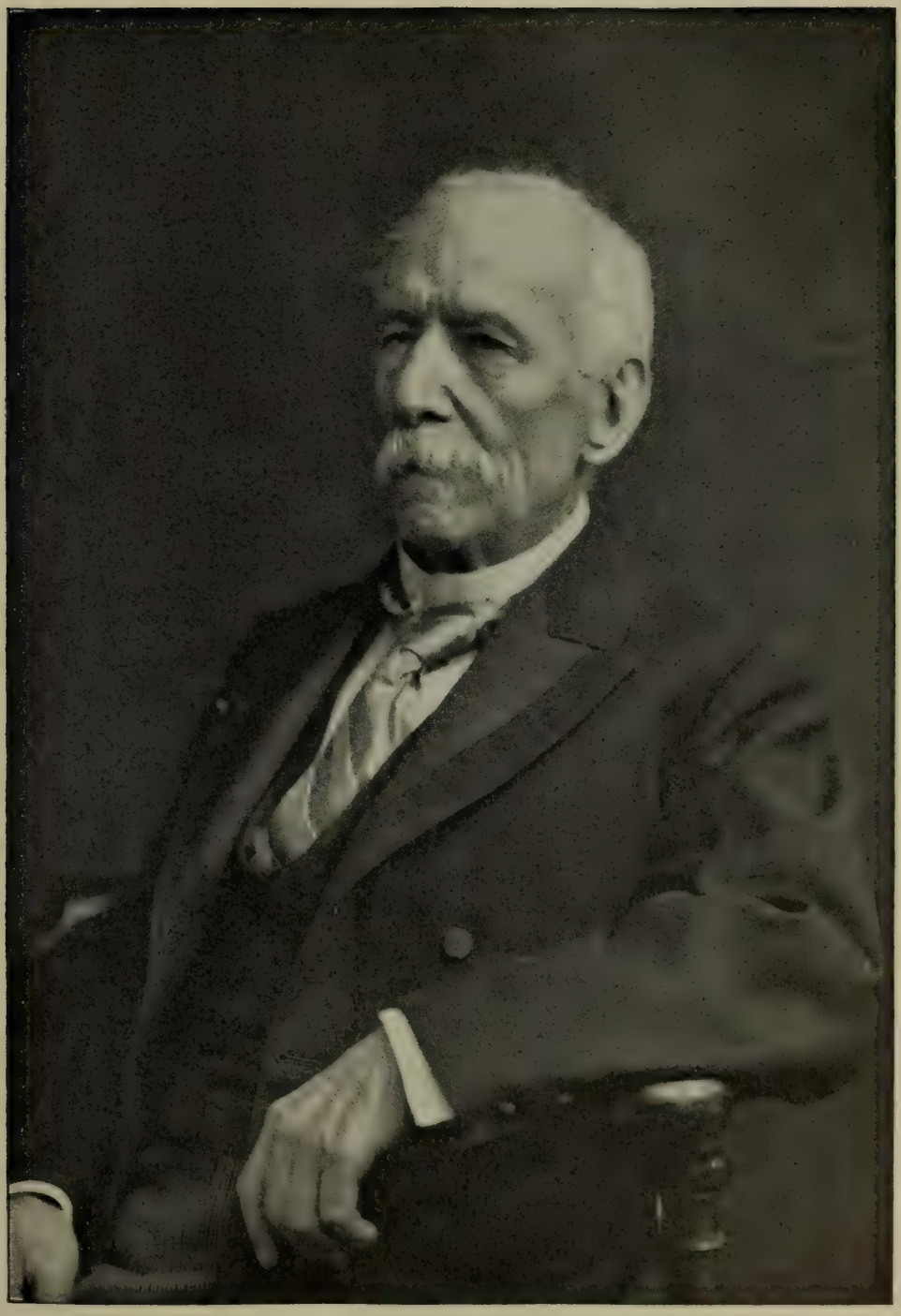
As John Stuart Mill truly said, "No art is complete unless another art, that of constructing the tools and fitting them for the purpose of the art, is embodied in it." So this invention became useless because of the want of the art of fitting it for the purpose it was hoped to attain.

In 1825 Cagniard de Latour, of the Academie des Sciences, by means of a little mirror and the aid of solar rays, made attempts to see the epiglottis and even the glottis, but unsuccessfully. Four years later, Benjamin Guy Babington presented to a meeting of the Hunterian Society an ingenious instrument for the examination of parts within the fauces not admitting of inspection by unaided sight. It consisted of an oblong piece of looking-glass set in silver-wire, with a long shank. The reflecting portion is placed against the palate, whilst the tongue is held down by a spatula, when the epiglottis and upper part of the larynx become visible in the glass. A strong light is required, and the instrument should be dipped in water so as to have a film of the fluid upon it when used, or the halitus of the breath renders it cloudy. The doctor proposed to call it the *Glottiscope*.

In the year 1832, Dr. Bennati, of Paris, used an instrument made by one of his patients, named Selligue, who was himself the subject of laryngeal tuberculosis. It consisted of a double-tubed speculum, one tube of which served to carry the light to the glottis, and the other to bring back to the eye the image of the glottis reflected in the mirror, placed at the guttural extremity of the instrument.

In the year 1838, M. Baumes exhibited, at the Medical Society of Lyons, a mirror about the size of a two-franc piece, which he described as being very useful for examining the posterior nares and larynx.

In the year 1840, Liston, in treating of œdematous tumours which obstruct the larynx, stated as follows:—"The existence of this swelling



HIS EXCELLENCY MANUEL GARCIA.

may often be ascertained by a careful examination with the fingers, and a view of the parts may sometimes be obtained by means of a speculum —such a glass as is used by dentists on a long stalk, previously dipped in hot water introduced with its reflecting surface downwards, and carried well into the fauces."

In the year 1844, Dr. Warden, of Edinburgh, conceived the idea of employing a prism of flint glass for obtaining a view of the larynx.

In the year 1844, Mr. Avery, of London, invented a laryngoscope in principle very similar to that now in use. The reflector was attached to a frontal pad, and was retained in its place by two springs which passed over the operator's head to the occipital protuberance, where there was a counter-pad. There were two defects, however, in Avery's apparatus —the one was that the laryngeal mirror (instead of being fixed to a slender shank) was placed at the end of a speculum; the other, that instead of employing the reflector for receiving the rays from a lamp placed on the table or elsewhere, Avery used his large circular mirror for the purpose of increasing the luminous power of a candle held near the patient's mouth.

In the laryngoscope of Bozzini and Avery the lamp and the reflector are combined, whilst in the modern instrument they are separate. The laryngeal mirror of Bozzini and Avery was placed at the end of a speculum; Czermak's was a modification of the dentist's mirror. Mr. Avery's invention was not placed on record till some time after the modern laryngoscope had come into use.

This brings us to a period, 1854, when one whom we are here to honour, and whose name we revere, was brought to the notice of the medical profession. He will forever be associated in the history of laryngology as the inventor of the laryngoscope—Manuel Garcia.

Manuel Garcia was born in Madrid on the 17th of March in 1805. When still a child his family were driven from Spain by the Peninsular War, and for a time settled in Naples. There the elder Garcia studied the art of voice production, of which his son was to become so distinguished an exponent. He came of a musical family, his two sisters, Frau Malibran and Frau Pauline Viardot-Garcia being the most noted singers in their day. The former died in 1836. The latter is still living, being 85 years of age, and enjoying remarkably good health. Young Garcia's fancy at first turned to the sea, but, in deference to his parent's wish, he was trained for the operatic stage. He made his first appearance in New York. It should be interesting to students of human longevity to learn that Manual Garcia's physique proved inadequate to the strain imposed by the work of the stage. On his return to Europe,

therefore, he established himself in Paris as a teacher of singing, gaining in time so great a reputation that he was appointed a Professor in the Conservatoire. He has lived since 1850 in London where he trained many of the greatest singers of the last century; amongst those whose names may be mentioned are: Jenny Lind, Johanna Wagner, Bataille, Santley, Antoinette Sterling, Margaret Macintyre, Katherine Hayes, Agnes Larcom, the Misses Orridge, Thudichum, and of later date Marchesi and Julius Stockhausen.

The following is his own account of the invention which has been so fruitful of benefit to mankind in directions undreamed of by its true begetter:—"Never being thoroughly satisfied with my own teaching, I longed to see a healthy glottis exposed in the very act of singing; but how could the mysteries of an organ so well hidden be revealed? One day in the autumn of 1854 I was strolling in the Palais Royal, preoccupied with the ever-recurring wish, when suddenly I saw the two mirrors of the laryngoscope in their respective positions as if actually before my eyes. I went straight to Charriere, the surgical instrument maker, and, asking if he happened to possess a small mirror with a long handle, was supplied with a dentist's mirror. Returning home, I placed against the uvula the little mirror (which I heated with warm water and carefully dried), then flashing on its surface with a hand mirror a ray of sunlight I saw at once the glottis wide open before me, so fully exposed that I could see a portion of the trachea. From what I then witnessed, it was easy to conclude that the theory attributing to the glottis alone the power of engendering sound was confirmed, from which it followed that the different positions taken by the larynx in front of the throat have no action whatever in the formation of sound." The discovery was made in 1854, and in the following year Garcia presented a paper to the Royal Society of London, entitled "Physiological Observations on the Human Voice."

I shall read the following extract from his original paper so far as it concerns the topic under consideration:—"The pages which follow are intended to describe some observations made on the interior of the larynx during the act of singing. The method which I have adopted is very simple. It consists in placing a little mirror, fixed on a long handle suitably bent, in the throat of the person experimented on against the soft palate and uvula. The person ought to turn himself towards the sun, so that the luminous rays falling on the little mirror, may be reflected on the larynx. If the observer experiment on himself, he ought, by means of a second mirror, to receive the rays of the sun, and direct them on the mirror, which is placed against the uvula."

The paper which marks an epoch in the history of medicine seems to

have been received with Olympian indifference by the august body to which it was submitted, and for some time excited little interest in the scientific world outside. For years the laryngoscope was scoffed at by superior persons as a "physiological toy," and its application to medical practice was treated as a vain thing, and even looked at askance by self-constituted keepers of the professional conscience. Had it not been, indeed, for the proselytizing zeal of the distinguished physiologist, Czermak of Buda-Pesth, who visited the chief scientific centres of Europe as a missionary eager to spread what was in the literal as well as in the figurative sense a new light, there can be little doubt that Garcia's invention, like those of Bozzini, Babington and Avery before it, would have been allowed to perish of neglect.

In the year 1857, during the summer months, Professor Turck endeavoured to employ the laryngeal mirror in the wards of the General Hospital of Vienna. In the month of November of the same year Professor Czermak, of Buda-Pesth, commenced to work with laryngeal mirrors, and in a short time overcame all difficulties. Artificial light was substituted for the uncertain rays of the sun, the large ophthalmoscopic mirror of Rueta was used for concentrating the luminous rays, and mirrors were made of different sizes. Thus it was that Garcia's invention of the laryngeal mirror led Czermak to create the art of laryngoscopy.

While Czermak had remarked upon some pathological conditions, he attributed the first studies in this field to his pupil, Semeleder, who in 1858 published an account of some pathological conditions of the epiglottis and of the tongue. Störk, Turck and Gerhardt, in the same year and the next, began their numerous contributions to the literature of intra-laryngeal pathology. In this Turck was especially prolific. All these earlier works of Turck were in some form soon translated into French and English. Whatever may have been his merit as to the inception of the idea of laryngoscopy, he was foremost in the spread of the knowledge of diseases revealed by it.

For the most part his idea of pathology, especially pertaining to tuberculosis, conformed to the principles of Rokitanski. He described the appearances in lupus, diphtheria, syphilis, tumours and œdema of the larynx. Störk, in 1859, in an article on the technique of laryngoscopy spoke of making laryngeal applications of nitrate of silver with the aid of the laryngoscope. Thus early was the question which agitated Horace Green and his adversaries conclusively settled without controversy. Czermak also claimed to have made applications of caustics and other drugs to the larynx under the guidance of the laryngoscope as early as 1859.

The use of the laryngoscope quickly spread in the large cities of other lands. Morrel McKenzie had visited Czermak in 1859, and was in Vienna during the controversy between Czermak and Turck. On his return to London in 1860, in company with Gibbs, Prosser James and others, he was foremost in the use of the laryngoscope and the study of the phenomena which it revealed, and in 1863 he obtained the Jackson prize of the Royal College of Surgeons for his essay on "The Pathology and Treatment of Laryngeal Disease," his brochure on "The Use of the Laryngoscope in Diseases of the Throat with an Appendix on Rhinoscopy" appearing in 1865.

C. Rauchfuss introduced into Russia the knowledge of laryngoscopy and intra-laryngeal operations. Czermak and Turck, as we have seen, published their first books in France in 1859 and 1860. In 1861 Moura had advanced far enough in the new art to publish a treatise on laryngoscopy, a second edition appearing in 1865. Czermak, besides his stay in Paris, also visited London, as did Turck. The former also visited many cities in Germany, and Tobold, in Berlin, in 1863 published his "Anleitung zur Laryngoskopie," in which he adopted the principle of fixing the reflecting mirror to a stand which was eventually modified into the present so-called Tobold's apparatus. The original idea of this, however, is to be found in Turck's papers.

Voltolini contributed much, by the originality of his diction and the fertility of his inventive powers, to the spread and advance of the art in Germany, especially as to naso-pharyngoscopy and the employment of the galvano-cautery. Post-rhinoscopy was at first eagerly pursued by Voltolini and Semeleder as an aid to the passage of the Eustachian catheter.

Strangenwald, Church, Krackowitzer, and John H. Douglas and Horace Green in 1861 reported the new art in America.

Louis Elsberg, of New York, published papers on the laryngoscope and laryngoscopic technique. The latter more than anyone else was active in drawing attention in America to the value of the new art, and for some time previous to these publications he had taught the technique in the University Medical College in New York. His attention had been attracted and his ardour stimulated by Czermak, who had sent him his book. These studies and observations he brought, in 1863, before the New York Academy of Medicine and the American Medical Association. He also thus early urged the value of topical applications to the larynx. Horace Green lived to see an instrument of precision prove, before the Academy of Medicine, the claims which he had advanced there so courageously and so tenaciously many years before, but he himself took

no active part in developing in his native country the art of laryngoscopy. He died in 1866.

It was several years after Elsberg became active in the propagation of laryngology in America that others joined him. In 1866 J. Solis Cohen, of Philadelphia, began that long series of communications which have done so much to establish the specialty of laryngology in America, and to stimulate its steady advance for nearly forty years.

In the Medical Schools and Universities instruction was soon given in the art of laryngoscopy. Turck and Semeleder are recorded as giving instruction in Vienna in 1861, the former being created professor in 1864.

In other large cities as well as in Vienna, private and public instruction was soon to be easily obtained by the student. In 1861, Elsberg had begun teaching laryngoscopy in New York, and in 1868, in the catalogue of the "Medical Department of New York," his name appears as Professor of Diseases of the Throat, but not until 1875 was laryngology included in the curriculum of the Harvard Medical School, and that of the New York College of Physicians and Surgeons. After this it soon became a department of nearly all the teaching medical institutions.

In 1862 Garcia was given the degree of M.D. by the University of Konigsberg *in honoris causa.*

To-day, additional honours are being laid upon this "Grand Old Man." The Royal Society of London, The Prussian Academy of Sciences, and the University of Konigsberg will congratulate him. The Musical Societies and his old pupils will honour him, and Laryngological Societies of many countries will salute him, there being representatives delegated for this purpose from the Berlin, South German, Vienna, French, Dutch, and Belgian Societies. The Spanish Government will congratulate him through the mouth of the representative at the Court of St. James', and I have reason to believe, from a letter recently received from my friend Sir Felix Semon, that notice will be taken of the unique event in other exalted quarters:

"From this introduction of the laryngoscope there has grown to be an orderly branch of medical science with its own special literature, instruction and teachers. With the passing years the work of Garcia has been seen in its true relations. Happily he has lived to see it fully appreciated, and has reaped the rewards of his labours amid the applause of his own day and generation.

"It is a pleasing thing to view the cordial relations which have always existed between him and the London profession. By it he has been, and still is, highly esteemed."

He remains to-day in the enjoyment of full health and strength, and

let us in conclusion extend our united hearty congratulations and good wishes to him.

I desire to acknowledge my indebtedness to the following sources from which I have derived my information, having quoted verbatim from many of them:—"The Laryngoscope," by Morrell MacKenzie; "Transactions of the Royal Society," Vols. 3, 7 and 34; "A History of Laryngology and Rhinology," by Jonathan Wright; "The British Medical Journal," "The New York Medical Record," and, finally, to my friend, Sir Felix Semon, for his interesting letters to me upon this subject, for the advance proof of his article which is to appear in the "Centralblatt für Laryngologie," and for his much appreciated kindness in sending me a photograph of Manual Garcia. I also wish to express my indebtedness to Miss Charlton, Assistant Librarian of the Medical Library, for the assistance accorded me in the preparation of this address.

The legislature of the State of Washington, and the organized body of the profession of that State, are to be congratulated upon having secured the passage through both Houses of this most commendable bill, against the opposition of the newspapers and quack doctors of the State. It prohibits the publication or printing of any advertisement to cure genito-urinary diseases, to restore lost manhood, or to treat this class of disorders. The penalty is imprisonment from one to six months for the editor or owner of any paper or proprietor of any printing establishment who publishes such advertisements.—*Cleveland Medical Journal.*

Mr. W. Roger Williams, of Clifton, states that Bristol, with a population of 340,000, provides annually the large number of 140,000 with gratuitous medical relief. He estimates that some 40,000 persons in Bristol are annually in receipt of medical relief who cannot and ought not to plead poverty. He further states that if these undeserving crowds were eliminated the funds at present available for charitable medical purposes would be amply sufficient for all legitimate requirements.—*Bristol Medico-Chirurgical Journal,* March, 1905.

Dr. Bryce shows, in his last annual report, that, during the year 1903-1904, of 99,741 immigrants who landed at the ports of Quebec, Halifax and St. John, 1,835 were treated at the detention hospitals, or 1 in every 54; 274 immigrants were deported, or 1 in 363.—*Canadian Journal of Medicine and Surgery.*

This is 1905, and we're moving. No dead line for *us.*—*Medical Mirror,* St. Louis.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

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Remittances, advertisements or business communications are to be addressed to the Montreal Medical Journal Co., Box 273 ; all others to the Managing Editor, 216 Peel Street, Montreal. All communications intended for insertion in this Journal are received with the understanding that they are contributed exclusively to this Journal. A limited number of reprints of articles will be furnished to authors at cost price, if a request to that effect accompany the manuscript.

VOL. XXXIV. MAY, 1905. No. 5.

IMMIGRATION AND DISEASE.

Statistics from the Dermatological Department of the Montreal General Hospital for the past two or three years show a considerable increase in the number of cases of scabies and favus applying for relief. While a few scattered cases of scabies are met with every year, the number during the past autumn and winter has increased to such an extent that one is perhaps justified in looking upon the disease as epidemic at present. The epidemic, if we may be permitted to use the term, is confined very largely to recently arrived immigrants from central and southern Europe, the few cases which have appeared in other races being generally traceable to contact with the immigrant class in the cheap boarding houses and night lodgings frequented by these people.

Scabies, while a disgusting and dirty disease which we are better without, cannot be looked upon as a menace to the public health. It is not at all difficult to deal with, and yields readily to treatment, liberal use of soap and sulphur speedily effecting a cure. Favus, on the other hand, is most resistant to treatment, and when it occurs, as is usually the case

among those who have no prejudice against uncleanliness and disease, unless they interfere with the bodily health and comfort, it is impossible to eradicate.

On looking over the statistics for the past ten years, one finds that the cases of favus reported from the hospital clinic have rarely exceeded three or four each year, except in 1901 and 1902, when the United States Government refused admission to persons suffering from this disease, and many immigrants passing through Montreal *en route* to the United States were stopped here and drifted into the clinic. Since then there has been an increase in the number of cases seen, and this is presumably accounted for by the fact that many of these people have made their homes in Montreal. During the past winter Montreal has had a large influx of Russian Jews, some ten thousand or more, mostly of men who have hurriedly left their country intending to have their families follow them later. From the number of these immigrants who have applied at the various departments of the hospital for medical treatment, it is seen that a considerable proportion of them have suffered from favus, as they show unmistakable evidence of having had the disease, although it is now quiescent. As the active period of the malady is during childhood and adolesence, cases rarely appearing after fifteen years of age, it is greatly feared that unless some measures are taken by the Government to prevent its admission, we shall soon have an alarming increase in what is rightly looked upon as a loathsome disease. The United States authorities have seen fit to refuse admission to persons suffering from this disease, and their judgment is equally applicable to this country.

"Le BILL RODDICK."

There is a paragraph in the April number of our contemporary, "L'Union Médicale du Canada," which puzzles us, and must have given false ideas to the readers of that journal. It is there stated that "At the last meeting of the Societé Médicale de Montréal the president of the medical students (we take it, of Laval University) came to ask the opinion of the members regarding an application of the students." The application seems to have been—though this is not clearly stated—that the Laval students should join in a petition to the Federal Government to create a central board of examiners having the powers indicated in "Le Bill Roddick." The paragraph suggests undoubtedly that McGill, i.e., the University, or at least the Medical Faculty of the same, has taken the unusual course of forwarding a petition to the students of another university asking for their signatures to a petition having an object opposed to the wishes of the teaching staff of that other university. Of

course, McGill has done nothing of the sort. Nevertheless, our French Canadian confrères have read into the terms of Dr. Roddick's Bill so much that is not there, so much undreamed of and unwished for by its author and his supporters in this province, that we imagine there are those who will swallow this and believe that McGill University has taken such a course. The only explanation that occurs to us is that some of the medical students of McGill have, through their president, or through their Medical Society, approached their confrères at Laval—an action on their part which would be quite natural and reasonable. That, however, would be a very different matter from what *L'Union Médicale* implies in its editorial; and were this what really occurred it ought to have been stated clearly.

HYGIENIC PROGRESS IN AUSTRALIA.

Among the most welcome of our exchanges is the "Australasian Medical Gazette," of Sydney. One can see in those columns the discussion of problems very like our own, and we are interested to see how keen appears to be the public spirit in which Canada's younger sister faces the numerous difficulties that beset a young land.

From the brief resume of the topics of the month, it is noticeable that the birth-rate of New South Wales increased 1½ per thousand in a year, though it is yet 5 per thousand below the rate of ten years ago; doubtless special circumstances are to account for the high rate of 32 per thousand that then prevailed. Victoria and Tasmania have taken up the tuberculosis question, and in the former Premier Bent announces that the Government is dealing with the disease as a state question, and has set apart land for building a sanatorium for both curable and incurable cases; by the time this appears in print the institution will be in running order. Tasmania, though a step farther back in point of time, is instituting similar procedures.

Sydney is debating the problem of devoting a million dollars to a public abattoir, and the Board of Health is properly alive to the necessity of having thorough inspection of all the meat killed, of abolishing private abattoirs so that this inspection may be the more rigidly carried out, of stamping inspected carcases, and of bringing all the large freezing establishments under central supervision in this particular. Finally, Brisbane has just passed through the throes of getting an infectious diseases hospital, and has apparently succeeded. None of these questions that vex our Australian brethren are foreign to ourselves, and both countries are building the foundations of structures that must last for

a long time, for none of these problems can cease to be problems for many decades to come. We wish them, and ourselves, a happy issue out of these troubles.

CANADIAN MEDICAL ASSOCIATION.

The thirty-eighth annual meeting of the *Canadian Medical Association* will be held at Halifax on the 22nd to the 25th of August, 1905. In the communication from the General Secretary announcing this event, two extracts from the constitution are given. These are:

A copy of every address, discourse, or paper read before the Association shall at once be handed to the General Secretary, and shall become the property of the Association, and shall be preserved with the other documents. Members desiring their papers to appear in any particular journal shall present a duplicate copy with the name of the journal marked thereon.

The success of these meetings depends upon the number and quality of the papers which are read as much as upon the liberality of the entertainment which is offered to visitors. A contributor quite properly desires publicity for his paper, even beyond the circle of hearers who may be present when it is read, and he may not be satisfied that it "shall be preserved with the other documents" of the Association. This laudable demand for publicity is recognized in the second clause, in which it is requested that "members desiring their papers to appear in any particular journal shall present a duplicate copy with the name of the journal marked thereon." The implication is that the paper shall not appear in any other journal than that indicated. The Association publishes no transactions, and the ownership and disposition of the paper rests with the author. Two years ago there was no regulation. The result was an unseemly scramble on the part of journals anxious to fill out the lean summer numbers, as we had occasion to remark at the time. Last year an agreement was reached that members should be left free to exercise the choice permitted to them by the constitution, and the results were, if anything, more unsatisfactory. Papers which were assigned exclusively to this Journal appeared elsewhere before and after our publication.

Most authors are of opinion that sufficient publicity is given to a paper if it appears in one general and one special journal, and this is our judgment, too. There are other journals more sweet-tempered which make no such exclusive rule, and if the views of authors are not respected by the Association, they will either decline to read papers, or retain the disposition of them entirely in their own hands. The success of the Association is bound up in this matter. The value of the meet-

ings will be much impaired if authors find that, through no fault of theirs, journals having an exclusive rule are compelled in self-defence to decline the publication of papers presented at the meetings.

Last July we had to record the death of Dr. Rollo Campbell, eldest son of Dr. F. W. Campbell, which occurred from typhoid fever on the 30th of May, 1904. Now, again, we have to mention the death of Dr. Campbell's only surviving son, Francis Wayland, which took place on the 17th of April, 1905, also from typhoid fever, in the thirtieth year of his age. At the same time we are obliged to admit that Dr. Campbell himself is extremely ill, and that his condition is such as to cause grave anxiety to his friends. To all who dwell in this afflicted household we make most respectful tender of sympathy.

Ten years ago the antitoxin treatment of diphtheria was begun by the Department of Health of Chicago. During the previous ten years there had been 13,566 deaths from diphtheria and croup reported to the Bureau of Vital Statistics, a yearly average of 1,356, and a proportion of 13.53 deaths in every ten thousand of the population. During the ten years ended with 1904 there were only 8,129 deaths reported, a yearly average of 812, and a proportion of less than 5 in every ten thousand of the population. These figures show a reduction of 5,437 in the actual number of deaths since the department began the antitoxin treatment. They show a relative reduction in proportion to increased population of nearly 64 per cent.; that is to say, if the ravages of diphtheria had not been checked by the use of antitoxin during the last 10 years there would have been 22,538 deaths instead of 8,129—a saving of 14,409 lives.

The Journal of the Sei-i-Kwai or Society for the Advancement of Medical Science in Japan publishes a short article dealing with shell wounds; the larger part of the journal is in Japanese, with, however, an index in the English language, and the article above mentioned is printed in English. It is evidently translated by a Japanese, and its faithfulness to our own diction is quite remarkable. A breath of unconscious humour refers to the speech centre as "the Broker's convolution." The case of Gavarvitch Plakaff is detailed fully as to injury, treatment, result and post-mortem examination. Shade of Napoleon Bonaparte! Wound the enemy with a fragment of a 10-inch shell, rescue him by "our Second Fleet," trephine his skull, treat his wound antiseptically, and finally, when dead, perform an autopsy on him. This is certainly

the scientist in his perfection! Meanwhile we suppose the little Plakaffs in a Siberian village cry and laugh and munch black bread just as unconsciously as if their father had not attained his little niche of fame in these columns and elsewhere.

DR. OSLER'S VISIT.

No one of Dr. Osler's friends, acquaintances or even interested auditors will have failed to feel on this occasion a keener regret than before, because his departure is, to McGill University and Montreal a thing not of the future, but of the past. Lately, through three months, he has been overpowered, it may be, by eulogy and the language of admiration; speaking between friends, Dr. Osler will understand what we mean when we say that we feel as if it were our right as a medical community to assure him of our affection, to assure him that his place is more in our hearts than in our heads, and that the removal of a master is not so much to us as the absence of a friend.

Dr. Osler made his farewell visit the occasion of two public speeches, the first before the Students' Medical Society, and the second an after-dinner speech at the banquet of the Undergraduates in Medicine. The same spirit to some extent pervaded both utterances, and the general idea was to magnify the importance and the dignity of studentship in its wide sense; the true spirit of inquiry after truth can not be unduly magnified, cannot be too earnestly desired, and never fails to add an increased lustre to the most exalted. It would be a fruitless task to set forth the details of these talks, for a great deal of their charm lies in the delivery, the happy turned phrase and the earnestness of purpose that makes Dr. Osler an appealing speaker.

In a wide circle of acquaintances and a large opportunity of influence, he has never failed to consistently preach his doctrines of the power of work, of the necessity of keeping the ideal in sight, and the good tidings that the gates of knowledge open, not only to the brilliant picklock, but to the repeated smiting of the besieger who will not be repulsed. These things we have heard before, but it becomes no one to say that they are repetitions, until he has laid them to heart and reduced them to practice; the gist of those speeches was far from new; we have even heard them before from the same lips, but as long as the lesson can yet be learned, until it is learned, it is Dr. Osler's duty to hammer it in by main force, and it is a duty he will probably fulfil again and again. If ever the glad time come, when these things will be the habit of most of us, nay, even of any considerable number of us, Dr. Osler will lay the old familiar articles of doctrine upon the shelf, and will point out an entirely new,

and, we doubt not, an infinitely higher set of ideals. Doubtless before this second lot is learned, our teacher will be, in years, an old man. In the meantime, we wish him no better fate than to continue fulfilling this same duty; no man can estimate how far-reaching is its result, and its very earnestness is an irresistible stimulus.

Reviews and Notices of Books.

A Text-Book of the Practice of Medicine. For Students and Practitioners. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College Philadelphia. In one volume of 1,120 pages, 129 engravings, 10 full-page plates in colours and monochrome. Cloth, $5.00 net. Lea Brothers & Co., Philadelphia and New York, 1905.

Professor Hare's position in the world of medicine is a guarantee of the quality of the work that is here under review, and it can be said that the book is well made, and that nearly all of it is just as it should be. In comparing it with other text-books of its kind, the particular points noticeable are that the author has made good use of much statistical material, and, as might be expected, has laid especial stress upon that part which deals with treatment.

The volume is illustrated, and the coloured plates are good and adequate, but the wood cuts in many cases are not, and it is doubtful if they add to the efficiency of the book. The cuts are not consistently selected, if one may use the term, for most of the articles are not accompanied by illustration. What is here stated does not apply to diagrams of the nervous system, which are always necessary to the average practitioner and to the student; the others form so comparatively small a part of the book that their absence would scarcely be noticed. In regard to usefulness, we contrast the full page figure on p. 615 illustrating varicose veins of the œsophagus with the little diagram on p. 503, showing the reserve energy of the heart in valvular disease, which we do not recollect having seen so well explained before.

It is a fair test of such a book to take a well-known disease; the article on pneumonia we find among diseases due to specific infection, and not under diseases of the lungs, where, however, broncho-pneumonia does appear. Why carry into present-day books the use of terms "croupous" and "catarrhal"; our own experience with students has been that these do not convey enough meaning to justify their use. It is difficult to say whether lobar pneumonia belongs most to the diseases of the respiratory tract or to general diseases, but it strikes us that the diseases of the

lungs without it look like a committee without a chairman. It is good to see that no essential difference is insisted upon in the effect, upon the individual air-sac, of the different infections; but it is doubtful if the division of pneumonia into the stages of red and grey hepatization serves any useful purpose, and it certainly obtains, in the student eye, an undeserved importance. In the general discussion upon the problems of tuberculosis, the author is dealing with so many debatable questions that he has good chances of exciting criticism, but we give Professor Hare credit for choosing, in a text-book for students, to be dogmatic and clear cut in his statement of belief.

A full list of tropical diseases is introduced, and these are dealt with in an excellent way—no one, so far as we notice, has been neglected, nor is any article of undue length; the authorities are cited up to the very present, and the relative importance of these diseases to a practitioner in America is stated.

Finally, there is one large part of this book which will specially appeal to its readers, viz., that devoted to treatment. It has not always been so in text-books of medicine, if one may trust the reviewers, and one feels here the author has felt most at home, that here, perhaps, in his own mind exists the reason for its publication; the full and practical suggestions as to therapeutics are beyond our personal ability to criticize, and we do not feel the need to attempt criticism, for these bear the mark of the painstaking, best efforts of the talented author, and into them he has woven years of careful observation and practice. In this regard above all others we feel sure that the practitioner will welcome Professor Hare's book as gladly as we personally have done, and when all is said, there is perhaps no part of a text-book that is so necessary or so capable of useful application as this.

Gynecology, Medical and Surgical.—By Henry J. Garrigues, A.M., M.D., Gynecologist to St. Mark's Hospital, New York City, etc. Philadelphia and London. J. B. Lippincott Company, 1905.

Professor Garrigues in 1894 wrote "A Text-book of the Diseases of Women," "for general practitioners and students," a very commendable treatise. It is published by W. B. Saunders of Philadelphia and the third edition appeared four years ago.

There now appears by this author a "Gynecology" "particularly written for students in medical colleges and such general practitioners who desire to make themselves acquainted with the essentials of modern gynecology;" and the publisher is Lippincott. Beyond this fact there is little difference between the two books, save that in the later work

the illustrations are slightly more numerous and the abbreviated "gynecolgic" has entirely supplanted "gynecological," the older and more sonorous adjective.

Professor Garrigues is also the author of "A Text-book of the Science and Art of Obstetrics," published by Lippincott in 1902. With reasonable expectation we may await the appearance of "A Text-book of Midwifery," and it would be only fair that Saunders should secure its publication.

Why ceaselessly multiply text-books? Certainly "Gynecology" fails to furnish an adequate answer. It is practically a duplicate of the older and somewhat larger "Diseases of Women," omitting only the chapters on anatomy and embryology, omissions which scarcely justify its existence as a separate publication.

As a book it adds another member to the already large family of American texts upon the subject and it possesses in marked degree the family-likeness, the family virtues and deficiencies. As usual the strong features are the mechanical ones, for the student or practitioner is sharply directed in whatever is provided of medical or surgical procedure. The diagnosis granted, the directions in treatment though by no means uniform in quality are sufficiently clear and succinct.

Twenty-three pages are devoted to the "diseases of the Rectum and Anus," and one cannot but wonder in reading the fifteen-line description of Kraske's operation, whether the desperate struggle to overtake this subject is worth the space alloted to it.

It is however, from the scientific aspect that the weaknesses are manifest. The lines of etiology, pathology, indications and choice of treatment, are seldom clearly or strongly drawn and these, we take it, are the first *essentials* of any medical text-book. While this particular book does not pre-suppose, it nevertheless fails to furnish certain definite knowledge both of the "physiology of disease" and the morbid conditions themselves; and particularly is this evident in the chapters which deal with the various neoplasms. Lawson Tait's long-lain ghost of the "Menstruating Fallopian Tubes" here again stalks abroad.

Still have we to wait in gynæcology the peer of Whitridge William's text-book in Obstetrics. The work of the publisher is here, as always in America, well done.

STUDIES IN THE PSYCHOLOGY OF SEXUAL SELECTION IN MAN. By HAVELOCK ELLIS. Pages 12-270. $2.00, net. F. A. Davis Company, Publishers, Philadelphia.

This is another of those books which reveal how near the surface of

humanity lies the beast, and in doing so it comes perilously near being unclean. It will probably prove to be more attractive to obscene persons than trustworthy to the "physicians, lawyers and scientists," for whom it is designed. There is no doubt that, in sexual selection, human beings are guided to some extent by those attractions of touch, smell, hearing and vision, which find their full realization in the lower animals; but decent and civilized men do not make much of them when they talk together. Certainly Mr. Ellis is not restrained by any considerations of reticence or modesty; and an author who writes of bad morals is apt to do it with bad taste. This assumes, of course, that there is such a thing as bad morals in a considerable section of the human race, which is neither good nor bad when observed amongst other animals. There is evidence of much research on the part of the author, a keen perception of the more obscure facts of psychology, a large citation of authorities, who are chiefly foreign, as English investigators have never attained to any high degree of celebrity in this branch of science.

The case reports give to the book an appearance of authenticity; but in reality they are written by bad men who were conceited about their own defects. These nasty fellows were probably liars when they came to boast about their filthy amours; and glorying in their savagery seems more apparent than their devotion to truth. A physician—we do not speak of lawyers—could go through life very comfortably with such knowledge only of these subjects as is obtruded upon him in the course of his daily work, without the results of the profound investigations which are contained in this book.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY FOR 1905. A Yearly Digest, arranged, with critical comments, under the editorial charge of GEORGE M. GOULD, A.M., M.D. In two volumes. Volume I., including General Medicine; Volume II, General Surgery. 700 pages each, fully illustrated. W. B. Saunders & Co., 1905. J. A. Carveth & Co., Limited, 434 Yonge Street, Toronto. Per volume: Cloth, $3.00; half Morocco, $3.75.

These two volumes are the most formal of all the digests of medical science which appear. They are intended to be a record of progress during the year 1904, but many of the references, perhaps the greater number, are drawn from the records of 1903. This is unavoidable in view of the labour demanded in editing and publishing the work. A rather careful examination of the 1,400 pages shows that only five references are made to Canadian literature, two from Toronto and three from this Journal. These three references are to typhoid fever in the Royal Victoria Hospital, by C. K. Russell, 1903; to H. A. Lafleur's case of gastric syphilis, 1903, and to Louis Loeb's work on the coagulation

of the blood, 1903. No mention is made of anything which has been done in these parts during the past year, and some narrow-minded persons will think that is an imperfection in a work which is given out as a digest for 1904. On the other hand, this leisurely treatment has its advantages, for things look different a year after the event. Much of the "progress" in medicine is apparent rather than real, and a reading of these earlier discoveries confirms that view. The material which Dr. Gould and his fellow-workers have had to handle is enormous in its mass, and the wonder is that they have done so well.

PRACTICAL PEDIATRICS. By Dr. E. GRAETZER, Editor of the "Centralblatt Fur Kinderheilkunde" and the "Excertpa Medica." Authorized translation by HERMAN SHEFFIELD, M.D., New York. Pages 12-544. Price, $3.00 net. F. A. Davis Company, 1914-16 Cherry Street, Philadelphia.

This small volume is intended, so the translator states, to be a minature encyclopædia of the medical and surgical diseases of infancy and childhood. In so far as an enumeration, with in many cases the briefest description, of all the possible diseases and congenital defects of this period of life is concerned, it may be said to fulfil the claim. It was quite out of the question to include general medicine and surgery with all the specialties in this compass, and furnish much information on any one subject, but when it purports to be a "practical" guide to the practitioner as well, we venture to take a different view. There is a want of proportion in the amount of space devoted to the different subjects. Diseases which the average man never sees, and perhaps has never heard of, are described at length, while the common disorders of digestion are dismissed with a few lines. Probably fifty per cent. of the children's diseases seen by a general practitioner are disorders of the digestive system, yet the whole subject is dismissed with a little over two pages on "dyspepsia," and less than two on "enterics." On the other hand, we find "gastromalacia," "singultus," and "bulimia," together take up a page or more. The chapter on congenital malformations furnishes a very complete classified list of these abnormalities, a feature which is usually wanting in the smaller text-books on pediatrics.

THE PRACTICAL MEDICINE SERIES. Volume I., General Medicine; Volume II., General Surgery. The Year Book Publishers, Chicago. 1905.

This series is to comprise in ten volumes the year's progress in medicine and surgery, and is under the general direction of Gustavus P. Head, M.D. The editor of the present volume in surgery is John B.

Murphy, M.D., and in medicine, Frank Billings, M.D., and J. H. Salisbury, M.D. These books are not small. They contain respectively 347 and 545 pages, and sell at the remarkably low price of one dollar. In the volume on surgery we fail to note any mention of work which has been done in Montreal, and only short references to Canada as a whole. This series is published primarily for the general practitioner; at the same time the arrangements in several volumes enables those interested in special subjects to buy only the parts which they desire.

THE INTERNATIONAL MEDICAL ANNUAL: A Year Book of Treatment and Practitioner's Index. 1905. E. B. Treat & Company, 241 West 23rd Street, New York. Price, $3.00.

This *Annual* is primarily intended as a work for rapid reference, but we venture to think that the practitioner who will read it through will be well repaid for his trouble, and that there is no speedier way of attaining an intimate acquaintance with the present position of medical knowledge. This passage is from the preface, and we are inclined to assent to its truth. The literature of the year has been examined most thoroughly, and nothing of importance has escaped detection. The plates and diagrams are singularly clear, and the work is a text-book as well as an annual.

MEDICAL PHILOLOGY. By L. M. GRIFFITHS, M.R.C.S., Eng. F. W. Arrowsmith, Quay Street, Bristol. 1905.

This little book has a fine flavour of learning. It contains a study of such words in the *promptorium parvulorum* and the *Catholicon Anglicum* as have a medical interest. The former was written about 1440, and the latter is an English-Latin word-book dating from 1483. A most entertaining account is given of such words as agnail, ache, ballocks, blear-eyed, bonschawe, dote, and it ends with elf. The editor hopes "to be able to find opportunity for continuing them through the rest of the alphabet." We also share in that hope.

THE PRINCIPLES AND PRACTICE OF ASEPSIS. By ARTHUR STYLES VALLACK, M.B., and Ch.M. (Sydney), L.M. (Rotunda), Surgeon to the Berrima District Hospital, New South Wales. Ballière, Tindall and Cox, London. 1905. Canadian Agents: J. A. Carveth & Co., Toronto; Chandler & Massey, Toronto.

This is an entirely sensible little book upon a subject of which too much cannot be heard. A method of sterilizing catgut by heat—boiling in turpentine—is described. Experimental evidence makes the book interesting.

EYE, EAR, NOSE AND THROAT NURSING. By A. EDWARD DAVIS, A.M., M.D., and BEAMAN DOUGLAS, M.D., New York. With 32 illustrations. Pages 16-318. $1.25 net. F. A. Davis Company, 1914-16 Cherry Street, Philadelphia.

This book is a guide for the intelligent care and nursing of the various diseases of the eye, ear, nose and throat, and to instruct the nurse as to her exact duties during and following operations upon these organs. A nurse who would follow the directions given would leave nothing to be desired either by patient or by surgeon.

SAUNDERS' QUESTION COMPENDS: Essentials of the Practice of Medicine. Prepared especially for students of medicine. By WILLIAM R. WILLIAMS, M.D., Tutor in Therapeutics, Columbia University, New York. 461 pages. W. B. Saunders & Company. 1905. J. A. Carveth & Co., Limited, 434 Yonge Street, Toronto. $1.75.

This little work for students preparing for examination will be a trusty aid. It contains a large amount of information in the least possible space.

Medical News.

McGILL UNIVERSITY, FACULTY OF MEDICINE.

TENTH ANNUAL ANNOUNCEMENT, POST-GRADUATE COURSE, 1905.

The tenth regular course of instruction for post graduate students will be given by the Faculty of Medicine of McGill University during the month of June, 1905: The course will begin on Monday, June 5th, and will be carried on until Friday, June 30th.

This year it has been decided by the Faculty to depart somewhat from the lines upon which the course has been conducted in the past. The principle adopted in framing the work for this session is to make each course optional, attaching thereto a special fee. The applicant, after paying the initial registration fee, is entitled to select the course which seem to be best suited to his needs. The programme, speaking broadly, includes general clinics and special courses, the latter having been added this year, in order to meet the wishes of those who desire work along special lines.

In addition to stated special courses arranged if a sufficient number of men—three or more—desire special instructions in any one subdivision of a subject, they may secure it by applying to the head of the department concerned, or to the Registrar. A course will then be arranged according to their wishes, as far as is possible, and a special

fee will be charged. A registration fee of $5 will be charged each student.

Courses will be given in Medicine, Dermatology, Diseases of Children, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology and Otology, Rhinology and Laryngology, Hygiene and Bacteriology, Morbid Anatomy, Clinical Diagnosis by Laboratory Methods, and in Diagnosis by X-rays.

NOTRE DAME HOSPITAL.

During March 208 patients were admitted; 198 were discharged. Twenty-two deaths were registered, of which 13 happened within 48 hours after patients' entrance. In the outdoor department 2,086 patients were treated. The ambulance responded to 99 calls—54 for accidents, 34 for private cases and 11 were false or useless.

HOTEL-DIEU.

During the month ending 31st March, 1905, 478 patients were admitted, of whom 213 were female patients; discharged 123 men and 115 women; died, 4 men and 5 women. The ambulance was called out on an average twice a day for private cases.

The trustees of Johns Hopkins University and Hospital have appointed Dr. Lewellyn F. Barker to fill one vacancy caused by the resignation of Dr. Osler as Professor of Medicine. Dr. Barker has been Professor of anatomy and more lately of medicine at the Rush Medical School, Chicago. He is a graduate of Toronto Medical School in 1890, and was for some years at Johns Hopkins before going to Chicago. Dr. William S. Thayer, formerly Associate Professor of Medicine, has been appointed Professor of Clinical Medicine. He is a graduate of the Harvard Medical School, 1889. Dr. Barker is thirty-seven, and Dr. Thayer is forty years old.

Dr. Dagenais, chairman of the Health Committee, announces that the city's bacteriological laboratory is now fully equipped for work. The department is prepared to proceed with the examination of water and milk suspected of containing bacteria. Analysis will also be made in cases of suspected diphtheria, typhoid fever, tuberculosis and other infectious diseases.

There were 131 deaths from cerebrospinal meningitis reported in New York during the week ending April 1, an increase of 46 over the total for the previous week. In Cleveland 35 deaths have occurred from this

cause. The total number of deaths from the disease in Boston is so far 25 as against 14 for the corresponding period last year, and 37 for the entire year of 1904. Middletown, N.Y., and Lowell, Mass., are also showing numerous cases.

During the month of March 1,054 cases of typhoid fever, with 91 deaths, were reported to the health authorities in Philadelphia. In February there were 600 cases. The last week of March showed a falling off of seventy-five cases, the total being 231 new cases, as compared with 306 returned the week before. The fever is worst in the northeast section of the city, which is getting filtered water, and is less prevalent in the wards receiving unfiltered Schuylkill water.

The establishment of a new hospital in Quebec is being talked of. The new institution is for the Catholics of St. Jean Baptiste parish, and a number of leading physicians are at the head of the movement, and hope to bring it to a successful issue.

The twenty-fifth annual meeting of the Ontario Medical Association will be held in Toronto, in the New Medical Buildings, Queen's Park, June 6th, 7th and 8th, 1905.

A hospital for the treatment of patients suffering from measles in all probability will soon be erected in the vicinity of the Toronto Isolation Hospital.

Dr. L. A. Demers, who for the past four years was in charge of the medical clinics in the Notre Dame Hospital, resumed his lectures on the theory of medicine in Laval.

A farewell dinner to Dr. William Osler will be given at the Waldorf-Astoria in New York on the evening of May 2nd.

Owing to Dr. J. P. Rottot's illness, Dr. E. B. Benoit was called upon to take charge of the medical clinics in the Notre Dame Hospital.

Dr. John Herald, Professor of Medicine, Queen's University, Kingston, died on the 12th of April, at the Toronto General Hospital, where he had been under treatment for the results of chronic nephritis, from which he had been suffering for several years. Dr. Herald was born in Scotland in 1855, the son of Rev. John Herald, late Presbyterian minister at Dundas. He graduated at Queen's in arts in 1876, and in medicine 1884, and soon afterwards joined the staff of the college.

Dr. Cranston de St. Remy, of Kingston, died in St. Vincent Hospital, New York, on April 7th, after several weeks illness. He had been house surgeon for the past year in the Manhattan Eye and Ear Hospital. He graduated at Queen's Medical College in 1903, and served a year as a house surgeon in Kingston General Hospital.

Dr Alonzo W. Marston, of Hull, died on April 3rd, in the 58th year of his age.

Retrospect of Current Literature.

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

HIRSCHFELD. "A Hitherto Undescribed Phenomenon in Peroneal Palsies." *Berliner klinische Wochenschrift*, March 13th, 1905.

Hirschfeld in examining eleven cases of this affection observed a peculiarity affecting the power of dorsal flexion of the foot. Five of the cases were of peripheral palsy, including three instances of multiple neuritis, and of the others two were of myelitic and four of hemiplegic origin. In studying the patient's muscular control it was found that with the knee extended the ability to flex the foot dorsally was much less than when the leg was flexed on the thigh, the difference in some cases being as great as 30 to 40 per cent. The author believes that the phenomenon is the result of the anatomical conditions under which the peroneal muscles functionate. Their action is always opposed by the muscles attached to the tendo Achillis, and this resistance, owing to the attachment of the gastrocnemius and plantaris to the femur is much greater when the leg is extended than when it is flexed. The observation has practical value in estimating variations in intensity of paralysis and in gauging the effect of treatment, as the power of dorsal flexion of the foot disappears last when the knee is flexed, and reappears first under the same conditions.

WILLIAM J. MORTON, M.D. "Radiotherapy and Surgery, with a Plea for Preoperative Radiations." *Medical Record*, March 25, 1905.

In a very interesting article the writer presents his views regarding the therapeutic value to be derived from the X-rays and radium treatment. So favourable have been his results, both as regards cure and absorption of infiltrated lymphatics, that he states that preoperative treatment should precede every operation for cancer with as much reason

and force as preoperative aseptic or antiseptic cleansing of the skin to be incised. Preoperative radiation, however, should be continued for not longer than six weeks unless there is evidence of an improvement, and the strength employed should be so regulated as to produce a mild dermatitis. The following facts are given to prove that radiotherapy can neutralize outlying infected areas: nothing is more common in the history of radiation than to see large areas of skin-infected carcinoma clear up, leaving a healthy skin: the early cure of recurrent cancer is cicatricial: by observation of the behaviour of cancer of the mucous membrane when under radiation, a distinct line of demarcation unfolds itself between the affected and sound mucous membrane, and by that sign affords a new indication to the surgeon to where to incise: by palpation of indurated lymphatics in breast cancer where absorption of the malignant induration may be visibly studied and verified by palpation. In conclusion, the paper claims that radiation treatment has a retarding effect upon the growth of some cancers, that it cures some cases, that it will increase the ratio of cures by operation (by its power of neutralizing outlying areas, and thus bringing the growth to be localized as in its beginnings), that for the same reason it transforms some inoperable cases into operable ones.

Warren Stone Bicham, M.D. "The Operative Treatment of Fractures in General." *The Post-Graduate*, March, 1905.

This important subject is considered under several headings. 1. The treatment of fractures in general. 2. Operative methods of approximating and fixing ends of fractured bones. 3. Bone grafting or implantation. 4. Operative treatment of simple fractures. 5. Operative treatment of delayed union, non-union and mal-union. 6. Operative treatment of compound comminuted and complicated fractures involving joints and of fracture-dislocations. 8. Operative treatment of separated epiphyses.

To summarize the status of fracture treatment, it may be said that the present treatment of fractures is in a transitional stage, and is now passing from the routine, hard and fast, prolonged splinting, which was in common use until a very short time ago, to the more rational methods of the present time, which include the use of passive movements and massage in conjunction with removable splints, and the practice of open incision in appropriate cases. With reference to the operative methods of approximating and fixing ends of fractured bones, the various mechanical measures are detailed, preference being given to kangaroo tendon or 40 day chromic gut. Silver wire is used only when there is

such a marked tendency to return of deformity, as in a spiral or long, oblique fracture, that a stronger retaining suture is required. The best method can only be determined when the parts are exposed, the best method being that which immobilizes most efficiently. The indications for bone grafting and various measures of procedure are given. There are now a sufficient number of authentic cases of extensive successful bone grafting from the lower animals to man to warrant the expectation that the technique of this operation will be rapidly elaborated, and the field of its usefulness greatly expanded. Several cases are cited in proof of this statement. The chief interest of the paper relates to the operative treatment of simple fractures. The position of the profession in Great Britain on this subject, as presented to the British Medical Association at their meeting in 1900, by Sir William H. Bennett, is referred to, showing that of those surgeons who had had such experience unqualified approval of operative treatment in simple fractures was expressed by only five per cent. Thirty per cent. favoured operation in special cases, while 65 per cent. disapproved of such treatment unless the cases were unmanageable without operation. The special objects obtained by and scope of operative measures are given, and certainly have much in their favour. The writer concludes that operative treatment is fully warranted, and should be unhesitatingly undertaken where the complete reduction of the fracture and retention of the ends of the bone in good apposition by simpler means are impossible; where complications otherwise irremediable exist; and is further warranted whenever it is considered that a distinct gain in time to the patient and increase in function of the part can be expected from open operation. The period of disability is considered by some surgeons to be lessened by one-third. If operative treatment be decided upon, it should be carried out immediately, but if this can not be done, some surgeons wait until a week has elapsed. In dealing with non-union, delayed union and mal-union, the open method has a very large field, and is deservedly becoming more and more popular. Where comminution is simple and not extensive, it may not particularly complicate the fracture, and in such cases the closed method may be adopted, otherwise the open is called for. In cases of fracture involving a joint, unless the ends can be accurately approximated and retained, the operative treatment should be employed, as the slightest irregularity upon the articular surface of a bone is apt to lead to impaired joint movement. Fracture-dislocations call for the open method, the dislocation being first reduced and the capsule sutured if torn, the ends of the bone then being approximated and held in position by internal fixation.

The separation of an epiphysis is in the majority of cases best treated by the open method. The X-ray does not help us very much in a diagnosis, as the epiphysis is transparent to these rays. The greatest diagnostic aid is gained by manipulation under anæsthesia. It is claimed that many of the so-called growing pains of young children are due to injury of or in the neighbourhood of the epiphysis, and that if the method advocated were done as a systematic procedure in such cases, there would not be so many deformed limbs and joints in orthopedic practice. A discussion on the paper is appended.

Dr. Orazio Schifone (Durante's clinic in Rome). "Concerning the Effect of Extensive Resections of the Skull and Dura Mater upon the Structure and Function of the Central Cortex." *Deut. Zeit. f. Chir.*, Nov., 1904.

Schifone's elaborate experiments on dogs, the nature of which is sufficiently indicated by the above title, are decidedly worthy of note from several points of view. The article is too long to abstract fully, but his conclusions, which follow, are comprehensive enough to answer.

1. Any large defect of the cranium and the dura mater is replaced, not by a new-bone formation, but by a thick and resistant fibrous tissue, causing firm adhesion of the scalp with the brain tissue.

2. These post-operative adhesions cause in the superficial layers in the cortex a series of changes affecting all the tissue-elements, the last phase of which is a destruction of a portion of the nerve elements and replacement by neuroglia.

3. In spite of these pathological adhesions and the consequent lesion of the cortex, there are never observed disturbances of motility, sensation, or nutrition in the animals, even after a long period.

4. The adhesions never give rise to Jacksonian epilepsy if wound-healing has occurred aseptically.

5. *Hernia cerebri* is never observed to follow the removal of large areas of the skull and dura, unless other mechanical or inflammatory causes come in to complicate matters, that is, increase of intracranial pressure, meningitis, or encephalitis.

6. Therefore, craniotomy, combined with removal of the dura, no matter how extensive, is not a dangerous operation, either in its immediate or its later results. Moreover, a large bone defect may remain covered only by soft tissues without fear of danger to the underlying brain, provided that the operation is carried out under the strictest asepsis. With regard to the possible development of Jacksonian epilepsy as a result of adhesions, it ought to be mentioned that the longest period Schifone left his dogs alive was nine months. While his experiments,

histologically, and with regard to disturbances of motion and sensation, are interesting, one can hardly accept them as having any strong clinical application to the question of Jacksonian epilepsy as a late result of adhesions.

THE TREATMENT OF APPENDICITIS.

Attention is drawn to the following papers, all of which appear in the *Boston Medical and Surgical Journal*, March 23, 1905.

C. A. Porter, M.D.—"Can we Wait for Localization when the General Peritoneal Cavity is Involved."

Maurice H. Richardson, M.D.—"Remarks on Appendicitis."

R. H. Fitz, M.D.—"Some Observations on Appendicitis."

Francis B. Harrington, M.D.—"Choice of Method of Opening the Abdomen in Appendicitis."

Herbert L. Burrell, M.D.—"Subphrenic Abscess as a Complication of Appendicitis."

G. W. W. Brewster, M.D.—"Immediate Operation versus Delay in Acute Appendicitis."

Thomas J. Monahan, M.D.—"The Bacteriology of General Peritonitis."

William C. Quinby, M.D.—"The Results of Operative Treatment of General Peritonitis following Appendicitis, at the Massachusetts General Hospital, during the Past Five Years."

These papers, along with the discussion which follows them, may be taken as representing the point of view regarding the treatment of appendicitis held by some of the leading surgeons in Boston. Although there are no very new points brought out, the first article is of more than ordinary interest, dealing as it does with a comparison between the plan of treatment advocated by Aschner, and followed by many surgeons in the Middle and Western States, and that generally employed by those of the North Atlantic States and Canada.

Dr. Erwin Stranksy. "Operation in Brain Syphilis." *Centralbt. f. d. Grenzgeb. d. Med. u. Chir.*, 1905, Nos. 1 and 2.

Stransky, in an excellent article, gives us here a critical summary of the cases of cerebral syphilis which have been hitherto subjected to operation. The first question to be answered, however, is as to whether operation for such a condition is in any case justifiable. On this point the opinions of authoritative neurologists seem to be fairly unanimous. It is when they begin to discuss the proper length of time that should be given to medical treatment, the establishment of the indications which

should decide for operation, and the interpretation of results, that their views diverge, and diverge widely.

Speaking generally, the English school (MacEwen, Horsley, Gowers, Bramwell, Starr) are warm advocates of operation. Horsley, in particular, is rather sceptical as to the value of medical treatment in this localization of syphilis, and would limit it to a period not exceeding six weeks. With him stand Gowers, Kocher, Bruns, Schlesinger, Neumann and others. The opposite opinion is held by Oppenheim and v. Bergmann, who are optimistic as to the effect of internal treatment, and admit operation only in rare cases. Starr recommends a three months' cure, as an average. He, with Henschen and others, take up a middle position.

The views of Henschen and of Schlesinger are quoted at some length. To the former we owe, first of all, a summary of the various intracranial manifestations of lues, in which the question of operation may arise. These are: External and internal pachymeningitis, congenital and acquired hydrocephalus (in some cases due to underlying syphilis); cerebral hæmorrhage as a result of luetic arteritis; above all, however, gumma. "Operation," Henschen remarks, "is only to be thought of when, as is often the case with old sclerosing processes and the larger gummata, specific treatment fails. Even then, it is advisable only when an easily localized, circumscribed and accessible tumour is present. Should there, now, appear in addition the *indicatio vitalis*, operation is advisable. The contra indications, apart from what has just been stated might consist in marasmus, a coincident tabes or progressive paralysis, the appearance of bulbar symptoms, ophthalmoplegia, a basal localization (especially when bitemporal hemianopsia is present), and multiple foci." A conservative enough position, truly!

Stransky, from a consideration of the published cases, adopts a somewhat more liberal point of view. Of 18 cases reported, 15 were gummata and 3 specific pachymeningitis. Of the latter, two gave favourable results, while the other, after showing considerable improvement, died of intercurrent disease a month and a half later; the autopsy revealed a much more extensive pachymeningitis than had been removed, so that, doubtless, the good effect of operation would only have been transitory.

Of 14 cases of gummata, 9 showed cure or lasting improvement, while the result in five was *nil*, or worse. Of the latter, two could not be rightly localized before operation; in a third, the operation was undertaken as a last resort during status epilepticus; in the fourth, the con-

dition had been for six months a very grave one and localization was imperfect; the fifth case was one of gummatous meningo-encephalitis.

It can thus be seen that the unfavourable results in these cases must be set down to circumstances for which syphilis as syphilis could hardly be made responsible—uncertainty of localization, too long a duration or too advanced a stage of the process. On the other hand, the large number of successful cases teach us that, when the tumour is localizable and accessible, and a specific "cure" fails, operation should not be delayed. The luetic nature of the growth in such cases, as opposed to other growths, should make no difference in considering the question of operation. As to the length of time which should be devoted to specific treatment, Stransky submits that it must vary widely, according to the case. There are those in which threatening symptoms forbid even Horsley's short limit; there are others in which it is possible and right to continue the treatment for the three months suggested by Allen Starr.

Oppenheim's dictum concerning operation for brain tumours in general, that "the physician should rather advise it than urge it," is also applicable to brain gumma, even when the expectation of success is greatest. The object of the review, or of the reviewer, is, not in the least to open a new field for surgical polypragmasia, but to demonstrate that syphilitic brain tumours are decidedly to be classed, under the before-mentioned limitations, among those in which operation offers favourable chances.

The question as to whether early removal of gummata or meningeal plaques is able to prevent epilepsy, or whether the exision of old luetic scars can cure the epilepsy of which they were the cause, it is as yet scarcely possible to decide.

An important side of the question, that of the purely sympathetic craniotomy for the relief of brain pressure due to syphilitic lesions, localizable or not, is merely glanced at in this review. Two of the cases cited would be in favour of such a procedure.

MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY, H. A. LAFLEUR AND W. F. HAMILTON.

W. T. Councilman. *Journal of the American Medical Association*, April 1, 1905.

Dr. Councilman describes the conditions of acute meningitis with more special reference to that form produced by the *Diplococcus intracellularis meningitidis*, which he believes is constantly occuring in a sporadic

form, aside from the not infrequent epidemic aggravations. The infecting organism, he states, is one of low vitality and incapable of a purely saprophytic existence. The statistics fail to give any adequate idea of the frequency of the infection in ordinary years. His experience, however, leads him to believe that with rare exceptions all cases of primary meningitis are due to this micro-organism, and that it would be impossible without sporadic infections to bridge over the interval between the epidemics. It is possible, too, that the germ may even inhabit the normal mucous membranes of the nose, for example, as has been shown in a few cases, where it produces a rhinitis, and infection of the meninges may take place through the lymphatics or by continuity of surface. We can only explain the epidemics of the disease, he says, either by an increase of virulence of the diplococcus or by a decrease in the tissues. The underlying causes of epidemics are unknown, and even atmospheric conditions can not be excluded. He discusses to some extent the relations of meningitis to pneumonia, as shown by the Massachusetts health statistics, and illustrates with a chart. Primary meningitis from the pneumococcus or staphylococcus is rare; secondary types are not so infrequent. The paper concludes with a description of the pathologic conditions in acute meningeal disease.

GINESTOUS. "Treatment of Phlyctenular Ophthalmia by the Yeast of the Beer." *Revue Française de Médecine et de Chirurgie,* March 20, 1905.

Ginestous has been making investigations in the treatment of phlyctenular ophthalmia. Such happy results have been obtained in the treatment by yeast of various affections due to the staphylococci, that he conceived the idea of applying this method to phlyctenular ophthalmia. The laboratory researches have shown that the staphylococcus aureus or albus is the micro-organism by far the most frequent in phlyctenulæ of the cornea. Ginestous being impressed by the uncertain results of the local application of the yeast, determined to administer it internally. It was given dry in a daily dose of four grammes, to an adult, in the form of wafers at the beginning of the two principal meals. Two grammes were given to a child. Since October, 1904, he has treated twenty-five patients by this method. In each case in which the yeast was given internally a very striking improvement took place in a short time. In certain cases the affection, which seemed rebellious to the ordinary local treatment, was cured by the addition of the yeast to the treatment. Ginestous believes that this method is of the utmost value in phlyctenular ophthalmia.

J. A. Miller, M.D. "Nephritis Complicating Mumps." *Medical News,* April 1, 1905.

Dr. Miller calls attention to the lack of definite literature upon this complication of mumps. He reports one case the features of which are summarized as follows:—A case of acute exudative nephritis in the course of mild double parotitis, in a boy four years old, with a marked family predisposition to kidney disease, occurring in the twelfth day of the parotitis, which was further complicated on the eighteenth day by a moderately severe attack of measles. The measles exercised no influence upon the nephritis, which entirely disappeared in thirty-five days, and after several months had not recurred. A careful review of the literature has revealed reports of twenty-nine similar cases. In addition to these, several observers mention the occurrence of febrile albuminuria during mumps as not infrequent. The author presents the following conclusions:—(1) Acute nephritis complicating mumps may occur in either children or adults, and is much more frequent in males than in females. (2) The parotitis is usually double, mild in character, and the nephritis is more liable to occur during early convalescence. Exposure to cold may be a predisposing factor. (3) The nephritis is usually moderately severe, of less than one week's duration, and ending in complete recovery. Rarely it may develop into chronic nephritis, or it may be so severe as to cause death. (4) This complication of mumps is infrequent, but probably not as rare as usually considered. Febrile albuminuria is probably very common in mumps, but this, as well as more serious kidney lesions, is probably often overlooked. (5) Careful urine examinations should be made, and strict precautions against exposure should be taken, in all cases of mumps, both during the acute symptoms and during convalescence.

During. *Münchener medizinische Wochenschrift,* March 14, 1905.

Düring reviews various theories that have been promulgated to explain the therapeutic effect of mercury in syphilis, and says that so far at least they have led to but little definite information. The older view that the metal exerts a bactericidal or antiparasitic action is probably unfounded, for the amounts absorbed are far too small to be able to unfold a diffuse power of this sort. The more recent view is that of Schade, who, starting with the work of the synthetical chemists in the production of artificial indigo, has developed the subject of the catalytic action of the heavy metals as oxidizing agents. This action of mercury is shown by the blueing it produces in tincture of guaiac in the presence of resinified

oil of turpentine, or of peroxide of hydrogen. That this action is due to electrical changes is illustrated by the change of form manifested by a globule of the metal when placed in turpentine or in tincture of guaiac. In the first fluid it becomes a flattened mass which resembles melted lead and retains any shape that may be given it, while on transfer of the tincture it at once resumes its normal characteristics. The phenomenon is ascribed to a positive electrical charge in the one fluid and a negative one in the other. Schade believes that through its catalytic stimulating effect on the tissues, the mercury enables the latter to repair the damage caused by the syphilitic poison. The process is not one of antitoxin stimulation, as some authors have averred, but one of simple antagonism to the toxins.

F. Choupin. "Renal Opotheraphy." *Revue de Médicine*, Jan. and Feb., 1905.

Choupin, in a long article, gives his experiments and results in the procedure advocated by Renault for the treatment for nephritis, viz., feeding the patients on pigs' kidneys, macerated and uncooked. He uses the kidneys of young pigs, absolutely fresh, and not weighing over 160 grms., and gives two daily for about 10 days in the fortnight; the treatment is continued for long times, one of the cases being so fed for eleven months.

Under this treatment many cases are bettered in so remarkable a way as to suggest an antitoxic serum's action; in most cases of renal insufficiency diuresis is brought above, with lessening or disappearance of albumen, increase in urea and in chloride. The one case of Choupin's which had not increased diuresis was one of polyuria with nocturnal incontinuance, and here the good fairy brought it about that the amount of urine dropped to normal. Better than these symptomatic effects is the general condition of the patient, who undergoes a "desintoxication" —a word which the English language cannot replace, but might with advantage adopt—which is evidenced by decrease of arterial hypertension, lessening dilatation of the heart, disappearance of œdema and generally increased well-being.

The well-established forms of treatment are not to be displaced, but supplemented, by this method, which the author states is not always without disadvantage, but is emphatically without danger. Exceptionally, gastric disturbance, with vomiting and diarrhœa, sweating, in which the perspiration has a urinous odour, itching, miliary or urticarial rashes may occur, but as a rule no trouble is experienced; the above happenings do not necessitate cessation of the treatment.

Charrier in the *Journal de Médicine de Bourdeaux*, Nov. 13, 20, and 27, 1904, reports five cases with good results, with no other treatment, and Page and Dardelin in the *Presse Médicale*, Dec. 21, 1904, report 18 cases, in 16 of which there was complete disappearance of albumen, with decided systemic improvement..

H. Hochhaus. "The Treatment of Pulmonary Hæmorrhages." *Deut. Med. Woch.*, February 2, 1905.

This author takes up the treatment usually accorded cases of this nature, both at the time of the occurrence, and to prevent recurrence. When a hæmorrhage happens, the patient should be put completely at rest, assured as to the outcome, and should have an icebag applied to the side of the chest concerned, or if this cannot be determined, to the heart region; ice may be given to suck, and Ol. Terebinth. in capsules, seven minims per dose. Ext. Hydrastis, minims ten to twenty, repeated twice, or Lead Acetate, grains three, every two hours, may be used. Hochhaus condemns the routine use of opium or morphine, unless there be cough so severe as to render liable the dislodging of a forming clot; a moderate cough, serving to expel the blood from the lungs, is not to be interfered with. The author favours the use of gelatine injections, 40 cc. of the warm ten per cent. solution being injected into the front of the thorax, or the outside of the upper arm; the pain following this may be checked by the icebag; Adrenalin, 1 in 1000 solution, or Ergotin may be used. In conclusion, the author speaks of a treatment which was much used formerly, viz., to tie a band around each of the limbs, so tightly as to prevent free return of blood by the veins; the limbs swell, become bluish, and the patient has a decided discomfort by the procedure; after one or two hours, if so long be necessary, the bands may be gradually loosened; and advocates, in addition, that strapping, by adhesive, of the side of the chest from which the hæmorrhage occurs will tend to keep the lung at rest and prevent recurrence.

Among therapeutic notes in recent literature are the following:— Galewsky, in *Münch. Med. Woch.*, March 14, 1905, has an article upon Calomelol, a soluble form of calomel; it is a grey powder, soluble in water up to about one in fifty, and its constitution is 75 per cent. calomel. Two years' experience lead the author to draw conclusions very favourable to it, especially to replace other forms of mercury that may be unsuitable even from idiosyncrasy; internally it may be given in doses of one and a half grain, and externally it is stated to be excellent for the eradication of pediculi pubis.

D. R. Brower, in the *Journal of the American Medical Association*, March 25, 1905, writes upon the treatment of idiopathic epilepsy. He states that the overuse of bromides is responsible for much epileptic insanity, and advises that the sodium salt be used in doses not larger than sixty grains daily.

Mahue, in *Berliner Klin. Woch.*, Feb. 27, 1905, reports a fatal case of Bismuth poisoning, where a ten per cent, bismuth ointment was used on superficial burns; the cause of death was impurity from admixture of lead and arsenic. It is suggested that such cases should be watched to notice any indications in the gums, mucous membrane of the mouth, the stools and the urine.

RETROSPECT OF LARYNGOLOGY.

The year of 1904 was not marked by any specially remarkable discovery in either ætiological or pathological conditions of the larynx, though the quality of the work done and the literature pertaining to this subject would indicate a steady advance in all directions.

As regards malignant disease of the larynx the importance of an early diagnosis has been emphasized by the fact that cases have been operated on in the early stages by thyrotomy with marked success, as the results obtained by Mr. Butler and Sir Felix Semon indicate.

The results are to say the least, very encouraging and the progress of time reveals the fact that there are few recurrences after the operation of thyrotomy and complete removal of the growth.

Thus Sir Felix Semon, in a lecture, delivered before the Section of Laryngology and Rhinology of the New York Academy of Medicine, November 4th, 1904, was able to say that of 20 cases of thyrotomy for undoubted malignant disease of the larynx between 1891 and 1904 there were 1 death, 2 doubtful recurrences and 17 lasting cures, bringing the percentage of successful cases in his own practice within that period up to 85 per cent.

His oldest case dates back to June 2nd, 1891, more than 13 years ago, and others are living who were operated on 12, 10 and 9 years ago. These results should convince even the most sceptical that this operation is immensely superior to the much more serious one of laryngectomy in early cases or where the disease is confined to the interior larynx. The X-rays and Finsen light have been quite extensively used in the treatment of malignant disease of the larynx but the results have been unsatisfactory, though in many cases they appear to have a marked effect in relieving pain.

Though efforts have been made to discover an agent that will prevent

the occurrence of cancer, these efforts have up to the present been unavailing.

As regards the treatment of tuberculosis of the larynx there is nothing especially new to report. The early diagnosis of pulmonary tuberculosis and suitable climatic treatment are valuable factors in the prophylaxis of laryngeal tuberculosis.

The application of the radium treatment has not been encouraging in its results and the X-rays in tuberculosis of the larynx is by no means a successful therapeutic measure, though in lupus it would appear that some cases have been treated successfully by this means.

Formalin has still its advocates as the most efficient method of treatment in the form of direct application, inhalations and even sprays, but there is by no means a consensus of opinion as to its beneficial effect. The operative treatment of tuberculosis of the larynx has received a good deal of attention, Lake of London still continuing his studies clinically and otherwise as to how far operative treatment is justified.

Apparently successful cases of removal of tuberculous growths in the larynx by thyrotomy have been reported.

Mr. Henrichi considers the operation of tracheotomy as a valuable curative measure in the treatment of laryngeal tuberculosis and reports 4 cases, 3 in children and 1, a pregnant woman, in which it was done with good results.

Dr. Dörendorf (Fränkel's Archiv. f. Lar., 1904) has written an interesting paper on leprosy of the larynx, and cases of a rare nature have been reported, such as actinomycosis of the larynx (Dr. Henrichi, Archiv., Inter., Lar., d'Ot., Rhin., Paris, 1904). Spastic aphonia reported by Dr. Barth (Fränkel's Archiv. für Laryng, 1904), and laryngite dothiementerique, ulcero-necrosante by Dr. Boulai (Archiv., Inter., Lar., d'Ot., Rhin., Paris, 1904).

As an interesting anatomical point Prof. Geronzi (Archiv., Inter., Lar., d'Ot., Rhin., Paris, 1904) has raised the question as to intra muscular nervous ganglia in certain intrinsic muscles of the larynx.

Dr. Marale, of Paris (Archiv., Inter., Lar., d'Ot., Rhin., Paris, 1904) contributes an article on the improvement of the voice in deaf mutes, and indicates the lines upon which future experiments by him are to be made.

Concerning benign neoplasms of the larynx, a most interesting discussion took place in the laryngological section of the British Medical Association at their July meeting on their aetiology, prognosis, and

treatment, Dr. Dundas Grant and Professor Rosenberg introducing the subject. The great advantage of endo-laryngeal methods were demonsirated. Though the ætiology and pathology are still somewhat obscure, the prospects of greater knowledge in this direction are good.

In the matter of instrumentation, progress has been made and although the use of the X-rays as a therapeutic measure is still in the experimental stage, as a diagnostic method they are being more and more resorted to and have been found to be of great value in the detection of foreign bodies in the upper air passages, especially when these foreign bodies could not be located by the usual means. The X-rays are also useful in the detection of mediastinal tumours pressing on the recurrent laryngeal nerves.

Another method for examining the upper air passages which is of great value, and consequently becoming more used is that of direct inspection.

This method owes its origin to Prof. Killian, of Freiburg, who has devised instruments to be used either intra-laryngeally or through an opening in the trachea. Dr. Alexander, of Berlin, who has been engaged in Prof. Killian's clinic, has contributed a valuable essay (Fränkel's Archiv., f. Lar., 1904) in which he has reviewed the history and supplied many new details of the advantages of direct inspection of the air passages.

Ingalls has some modifications in method, especially in illumination, that are of value. The use of the magnetic needle for the removal of foreign bodies from the upper air passages has not met with great success, two cases having been reported by Prota, in which the magnetic needle failed to remove the foreign body.

He demonstrated by subsequent experiments on dogs that the magnetic needle can be of use only when the foreign body is freely movable, and the needle can be brought near to it.

He considers it an uncertain method, but in suitable cases, a valuable adjunct to our armamentarium.

Improvements in sprays have been noted and there are good prospects of an electrically-driven pump replacing the more or less unsatisfactory water-driven pump at present so generally used for air receivers. Numerous other new instruments and modifications of old ones have been introduced, of more or less value.

In conclusion, as has been previously said, though nothing of a specially remarkable nature is to be recorded in the department of laryngology during the past year, the quality of the work has been good,

still it is to be hoped that more will be accomplished towards increasing our knowledge of the aetiology and pathology or laryngeal diseases, which from lack of sufficient experimental research is not as extensive as could be desired. W. L. T.

PATHOLOGY.

UNDER THE CHARGE OF J. G. ADAMI.

A. A. PINTO. "The Gonococcus." *Jour. de Physiol. et Path.*, Nov. 15th, 1904, p. 1,058.

The similarity in appearance and culture of the meningococcus of Weichselbaum, and the gonococcus has been previously pointed out. Class observed that several cases of cerebro-spinal meningitis were complicated with blennorrhagia, and was disposed to conclude that the two microbes were the same; but experiments with the meningococcus proved that it would not infect the urethral canal in man.

Pinto began by inoculating rabbits with the gonococcus, and by passing it alternately through experimental animals and ascites broth, he was able to raise its virulence very markedly, so that from having to use 40 c.c. to 60 c.c. of a gonococcus culture to kill a rabbit, he now required only 0.00002 to 0.00005 c.c. This remarkable increased virulence was obtained with difficulty. However, the gonococcus with this pathogenicity now resembled very closely the meningococcus in the cultural, morphological and inoculation experiments, and Pinto concludes that he believes we have to do with two varieties of the same species of micro-organism.

MAJOR W. TURNER. "Pemphigus Contagiosus containing Leishman Bodies." *Jour. of the Royal Army Med. Corps*, 1905, IV., p. 319.

The author encountered several cases of pemphigus contagiosus among the British soldiers stationed at Multan (India). The disease is non-febrile, but highly contagious, and readily spreads to different parts of the body, by scratches being infected from the original sore. It is characterized by vesicles varying in size from a pinhead to an inch in diameter, but no inflammatory reaction accompanies the lesion. After rupture of the vesicle, however, the part may ulcerate, and if untreated, on examining scrapings from the base of the vesicle, the author was able to demonstrate Leishman bodies in great numbers. These bodies are oval, with a sharply defined outline and one end pointed, measuring 2-4μ in length. The bodies appear identical with those discovered by Wright, in the "Oriental boil."

GULLAND and GOODALL. "Pernicious Anæmia; A Histological Study of 17 Cases." *Jour. of Pathology*, 1905, X., p. 125.

The paper comprises a post-mortem study of the different tissues and organs (excepting the nervous system) of 17 cases; 13 males and 4 females ranging in age from 25 to 61 years.

The histological findings in these cases can be summarized as follows: —*Stomach*—In 12 cases examined more or less atrophy of the mucosa was found. *Liver* showed in every case fatty and pigmentary changes, and in some there was central necrosis of the lobules. Large marrow cells were found in the liver acting as phagocytes, ingesting the red cells, while others contained the free pigment—hæmosiderin. Every liver gave the iron reaction. *Spleen* varied in appearance with the character of the cells preponderating in the pulp. Usually the organ showed congestion with normoblasts and megalcblasts present in varying numbers. Blood pigment was present in all organs which were tested for iron. *Kidney*—All cases showed catarrhal or interstitial nephritis, and ten gave the reaction for iron. *Hæmolymph Glands*—Destruction of the red blood cells was noted in the phagocytes. *Bone Marrow*—In all cases the red marrow was hypertrophied. The character of the cells differed in most cases, but blood destruction was common in all. Giant cells and eosinophiles were numerous in each case.

From their own finding, and those of others, the authors conclude that there is no direct evidence of this being a special disease of the intestinal tract, and that the changes noted in their cases in the stomach and intestine could be summed up as post-mortem change. The large amount of iron found in pernicious anæmia is one of the striking features of the disease, and this accumulation they regard as due to two factors—(a) storage, (b) hæmolysis. By far the greater part of this pigment in the liver—that in the portal zone—is simply stored up, the liver being the natural channel of excretion of broken-down hæmoglobin. This storage is not pathognomonic of pernicious anæmia. At the same time there is also a certain amount of destruction of red blood cells in the liver by the endothelial cells and phagocytes. Therefore, on the whole, the accumulation of iron is due partly to the destruction of weakly red cells and partly to the storing up of iron from hæmoglobin of red cells disintegrated in other parts. The spleen and hæmolymph glands show only an increased activity in disposing of broken down blood corpuscles. The bone marrow presents undue activity of red and white cell formation, the former of megaloblastic type. The authors point to this as being the essential seat of the disease, and the criterion is the finding of these bone marrow cells, the megaloblasts, in the blood. They believe that a toxin

is formed in some part of the body which acts on the bone marrow, interfering with the normoblastic blood formation, leading to megaloblastic cell production, and acting with negative chemiotaxis upon the leucocytes.

HEKTOEN. "Experimental Measles." *The Journal of Infectious Diseases*, 1905, Volume II., page 238.

Hektoen reports having successfully repeated the inoculation experiments of measles as made by Francis Home in Edinburgh in 1758. Home at this time hoped to accomplish by these experiments results similar to those obtained in vaccination against small-pox, and by giving an individual a mild attack of the disease to immunise him against future attacks. His inoculations, he reports, made with the blood of a patient with measles into abrasions on the arm of a healthy individual, proved successful in most of 15 cases. These experiments have been repeated by others, though the work was not carried on for practical purposes.

The author, Dr. Hektoen, obtained 4 c.c. of blood from a measles patient the day following the height of the rash. The blood was inoculated into two flasks of ascites broth and incubated at 37°C. No changes were apparently in the broth after 24 hours. Four c.c. of the fluid from one of the flasks was then inoculated subcutaneously into a healthy adult with the result that on the 13th day the temperature rose, and the following day the typical measles rash appeared. The course of the disease was typical, and was followed by a branny desquamation.

A second experiment was carried out in the same manner with different individuals from the first. The first symptom after inoculation was a rise of temperature on the 11th day with an eruption on the 14th. The patient was not seriously ill, and the recovery was prompt.

From this the author concludes that the virus of measles is in the blood some time at least during the first 30 hours of the eruption, and, further, that the virus retained its virulence for at least 24 hours in ascites broth.

DUDGEON. "Pathology of the Thymus Gland." *Jour. of Pathology*, 1905, X., p. 173.

Dudgeon points out that the Thymus gland is primarily an epithelial structure arising from the pharyngeal wall opposite the 3rd visceral cleft. It first appears as an alveolar gland, but later becomes invaded with connective tissue and lymphoid elements, which convert it into a lymph structure. The concentric corpuscles of Hassal are the remains of the epithelial tissue of the gland. The maximum development of the

gland is reached in the second year, and then it remains stationary till puberty, when the organ begins to atrophy. Accessory thymus glands are occasionally found, but absence of the thymus is rare. Observers are agreed on the infrequency of acute inflammatory processes in the thymus, and Dudgeon has seen only a single case. Tuberculosis of the gland he found in four cases, three of which were in conjunction with a generalized infection; the fourth case was one in which the tuberculous process was confined to the thorax. Though cases are reported, Dudgeon has not met with a case of primary tuberculous infection of the thymus. In regard to congenital syphilis of the thymus, it is a very rare affection, though Dubois and also Fürth claim to have met with such not infrequently.

Dudgeon describes atrophy of the thymus under two heads, (1) primary, (2) secondary atrophy. Under primary atrophies he groups the conditions found in marasmus, and diseases due to improper assimilation of food. Secondary atrophy of the thymus is a consequent to tuberculosis, chronic empyema and other wasting diseases. However, the histological changes are not markedly different in the two forms of atrophy, both being accompanied by a decrease in the lymphoid elements, with a secondary fibrosis. In short, atrophy of the thymus, primary or secondary, and wasting of the tissue in children go hand in hand. Whether there is any connexion between the changes in the thymus and lobular pneumonia, purpura and Grave's disease, the author will not say.

In sixteen cases of lymphatism, the thymus was considerably enlarged. The structure of the organ was found to be normal, except in one point—in that the eosinophile cells were much increased. "Sudden death" in cases of lymphatism he describes as due to (1) suffocation following tracheal pressure from the enlarged thymus, (2) intravascular clotting, due to a secretion of the thymus, (3) compression of the large blood-vessels of the neck. The author rather discounts the connexion between thymic asthma and laryngismus stridulus, nor does he throw any light on the supposed relation between the enlarged thymus and exophthalmic goitre.

Society Proceedings.

SOCIETE MEDICALE DE MONTREAL.

Meeting 28th March, 1905.

DR. MERCIER, PRESIDENT, IN THE CHAIR.

At a preceding meeting a committee had been chosen to study the merits of Marmoreck's antituberculous serum and report. The proceedings of the committee's first meeting were made public, and Dr. Marien

asked the secretary if he had given out the report, which, as had been decided, should not be made public. Dr. A. Mercier, Secretary of the Committee, declared that he had no connexion with newspaper reports concerning the Committee's doings.

Dr. de Martigny presented pathological specimens—1. Cancer of the stomach; 2. Cancer of the rectum.

In case No. 1 patient died from aneuria; in case No. 2 Segond's operation was performed, and the patient left the hospital on the 20th day apparently cured. Two months have elapsed, and no change has appeared in the patient's condition.

Dr. Marien again made a plea that histological specimens of cases reported be presented at the same meeting.

Dr. Dube insisted upon the necessity of an early diagnosis in cancer, and advocated early operation.

Dr. E. G. Benoit read a paper entitled "La lutte contre la tuberculose." This article had been prepared for the *Sanitary Bulletin*, and was written rather for the public than for the profession. The hygienic treatment of tuberculosis was the chief character of the paper.

Drs. Lecavalier, Lesage, Dube, etc., shared in the discussion which followed, and the sanatorium question was well considered.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The twelfth regular meeting of the society was held Friday evening March 17th, Dr. J. A. Macdonald, president, in the chair.

THYROIDECTOMY.

Dr. F. J. Shepherd exhibited a living case upon which Thyroidectomy had been performed, followed by unusual symptoms after the operation. The report of this case appears at page 347.

A. E. Garrow, M.D.—I would like to ask Dr. Shepherd whether there was any marked deformity produced on the trachea. I saw a case operated on by Dr. Shepherd where there was compression laterally and at the same time a tight band ran beneath the trachea and there was here also difficulty in swallowing. In the cases I have seen there was no displacement of the œsophagus simply marked deformity of the larynx and there was associated also some peculiarity in speech, a sort of cracked voice.

Dr. Birkett:—The case is one of very considerable interest particularly from a laryngological aspect. One cannot always depend upon the condition of the voice to be certain that a paralysis exists; it is quite possible for a non-paralysed cord to make such compensating move-

ment that the cords approximate sufficiently to produce a clear sound, and I strongly advocate the advisability of ascertaining the condition of the larynx and trachea in cases of enlargement before thyroidectomy. The reason for believing that the paralysis of the cord in this case was of old standing is that the cord was very much smaller than the non-paralysed cord, and it had the peculiar bowed aspect very characteristic of paralysis of long standing. When I saw this patient later on, the temporarily paralysed cord had considerably improved and I do not doubt that the nerve will gain its functions to a greater degree than at the present time.

Dr. Shepherd:—There was no deformity of the trachea at all in this case, it was perfectly normal, only pushed to one side as was also the œsophagus. One case I had where the tumour had grown from between the trachea and the œsophagus, the trachea was pushed aside, and the œsophagus was in such a position that it was with difficulty recognized, running as it did to the left side of the tumour, it looked like a large muscle and narrowly escaped being clipped in the dissection. I think the œsophagus is very often displaced through enlargements, and this would account for the great difficulty in swallowing, which occurs in many cases.

MOVEABLE KIDNEY.

J. M. Elder, M.D., read a paper upon some pathological conditions associated with Moveable Kidney. This paper appears on p. 334 of this number of the Journal.

F. J. Shepherd, M.D.—I have listened with very much interest to this paper. We have all seen these cases of floating kidneys and the accompanying symptoms. I myself, have operated on the gall bladder for symptoms referable to this organ and found nothing the matter with it. In one case, while closing the incision, the patient coughed, and the right kidney almost popped out of the wound. I fixed the kidney and all the previous symptoms subsided. In this case the kidney interfered with the proper functions of the gall bladder and the bile ducts. We all know the position the right kidney bears to the duodenum and any displacement of it will of course influence the duodenum and this may account for the peculiar symptoms which occasionally exist. I think one ought to accept with a great deal of caution the statements made with regard to the tremendous effect floating kidney has on the surrounding tissues; floating kidneys are fairly common, and can be readily found if looked for and there is no doubt that many do not give rise to any symptoms whatever, and are discovered only by accident.

A. E. Garrow, M.D.—I agree with Dr. Elder in that I am not a

strong believer in the extensive abdominal disturbances produced by a moveable kidney. Routine examinations reveal this condition very frequently in patients who are not complaining either of genito-urinary disturbance or gastric disturbances in any form and I fail to see how a moveable kidney is capable of producing cholecystitis of such an extent as to produce adhesions between the gall bladder and the colon as well as with the duodenum. I think that experience teaches us that most of these cases are either the result of gastro-intestinal catarrh, secondary infection of the ducts, or an associated cholelithiasis and the treatment of the gall bladder condition either by drainage or the removal of stones is followed by prompt and satisfactory cure without interfering with the co-existing moveable kidney, I have operated frequently for this condition associated with moveable kidney and have secured a perfect recovery without interfering with the kidney itself. My experience also has led me to believe that many of the moveable kidneys which give rise to distressing symptoms are associated with chronic inflammatory changes in the fatty capsule and I have tested this in several cases by simply freeing the kidney from its adherent bands and dropping it into its fatty capsule gain without any stitching at all, to find that the patient's condition has been relieved, not only temporarily but also permanently. As to the relationship of the so-called frequent attacks of appendicitis with moveable kidney, and to the fact that no further attacks of appendicitis have occurred after operation for moveable kidney, is no further evidence of relation between cause and effect than that which we know frequently occurs when a patient for a certain period of time has repeated attacks of appendicitis which seeem to disappear without any treatment at all. In the last 12 or 14 years I have met with several of these cases.

Dr. Elder has referred extensively to the literature of this subject and has drawn our attention to the many disturbances which may co-exist with the moveable kidney and while I think infection plays the important role in the production of cholelithiasis and appendicitis nevertheless, disturbances in the circulation produced in the way he has referred to, can certainly act as predisposing causes.

J. M. Elder, M.D.—While this is not a subject about which one can make a dogmatic statement, I quite admit that a wandering kidney may very commonly co-exist with other conditions—a palpable kidney is not a wandering kidney by any means. But I maintain there are a large number of cases where recurring attacks of appendicitis may be cured by fixing the moveable kidney. With regard to the point raised by Dr. Garrow, that symptoms may be due to adhesions of the fatty capsule,

I may mention a very interesting case occurring in a young unmarried woman; I operated for a moveable kidney and found a cystic tumour with a distinct pedicle which was attached to the capsule of the right kidney. It was apparently a cyst of the Wollfian body, as the contents contained urea and it was the size and shape of a kidney. Here was a case of a right kidney which had never been moveable, to the capsule of which was attached this wandering cyst, and the patient had very definite appendical attacks, evidently due to the mechanical action of this cyst pressing upon the appendix very much as a moveable kidney would do. I do think that it is quite possible that the pulling on the duodenum and bile ducts, in a case of moveable kidney, might produce an obstruction and so set up pathological conditions of a grave nature in the gall-bladder.

HYPERTROPHY OF THE PROSTATE.

A. E. Garrow, M.D., read a paper upon the diagnosis and treatment of chronic hypertrophy of the Prostate.

F. J. Shepherd, M.D. I have listened with a great deal of interest to Dr. Garrow's paper and must congratulate him on his success though apparently in no one case has there been a perfect result except in the case with the large tumour. It was soon after McGill's paper came out that I did my first operation, that is suprapubically, in 1885 or 1886. The patient was a man of 45 years of age complaining of great frequency and pain during micturition; the urine was normal. I had no difficulty in performing the enucleation of the gland which was about the size of a walnut on each side of the urethra; there was a little hæmorrhage but not much; the spaces occupied by the tumour were filled with gauze. The operation was most successful and the man is still alive and perfectly well. Curiously enough the next two cases I had both died. They were old subjects with damaged kidneys; it is most important to select your cases and statistics show good results when this rule is followed—that is, operation performed before any grave disease of the genito-urinary system exists. It is well known that most of the fatal cases die not from the result of the operation but from the accompanying disturbance. I have had several cases where after the operation was performed the growth was found to be a cancer of the prostate. I have no doubt that the best operation is by way of the perineum though in many cases the suprapubic is advisable and especially where you have a bladder which is not diseased. In this country patients are not so eager for operation as they are across the border, we are a good deal more conservative, and cases do not offer so readily. In the case of an enlarged

prostate where a person has to get up half a dozen times a night and where, as the old saying has it, the water is hard to turn on and harder still to turn off, then I think it is time to interfere surgically. Many cases get up at night two or three times for years and it does not bother them, but when catheter life is demanded it is a very serious condition. I operated on a case last year where a man had used the catheter for 40 years, and he was nearly 80. I found he had a huge cancer excavating the posterior wall of the prostate and bladder. He died. The diverticulum case mentioned by Dr. Garrow is most interesting. There is a specimen in the pathological Museum of the McGill Medical Faculty of a small diverticulum of the bladder but nothing so large as this one would indicate. I reported a case some time ago of stone which I removed from a man 84 years of age. He was treated for enlarged prostate for years and also suffered from periodical attacks of cystitis. He had to get up in the night 5 or 6 times and in day time was not much better. On examining him and passing a sound I came upon a very large stone, after the removal of which he has had no further trouble.

J. M. Elder, M.D.: Dr. Garrow in his paper stated that he had not had much success with the cystoscope. When I was last in London I made it my business to attend the clinics at St. Peter's hospital, especially those given by Mr. R. Harrison and Mr. P. J. Freyer, and while there what struck me was that the future of operations on the prostate would depend very largely on ability or otherwise of the operator to use the cystoscope; and I am more than ever convinced of that by my own limited work since. I had read Freyer's papers, and he gave me the impression that he had operated on pretty near all the prostates he came across and had got these wonderful results. But I found that at the clinic at St. Peter's Hospital out of a total of say 100 who were examined complaining of difficulty in micturition, one would be operated upon by him for enlarged prostate. I found that practically what he was doing was picking out the cases of adenoma of the prostate, very analogous to the condition found in other, and simply removing this tumour from the gland—a very different thing from excising the whole gland. The other cases of enlarged prostate were told to use a catheter. Again, out of 100, three were found to have cancer and were very properly excluded, and not operated upon at all, and this condition was demonstrated by the use of the cystoscope. I am therefore fairly convinced that the correct use of the cystoscope is the future guide to the operation. Most of the cystoscopes we have here are combined instruments, and are faulty. They use an instrument merely to give a good view of the field, and at the same time get in-

formation as to the character of the kidney, and you may see, and do see very well, the spurt of the urine from the ureter and are able to judge of the difference between the secretion of the two kidneys. I think that the suprapubic method is the method of the future and not the perineal operation.

A. E. Garrow, M.D. I am rather inclined to agree with Dr. Elder in connexion with the treatment of stout patients by the suprapubic method, however, a point that I would like to urge is this, that where the enlargement chiefly involves the lateral lobes I always choose the perineal route if necessary combined with the suprapubic opening because adenomatous masses are then so readily shelled out by the finger. On the other hand, if you are dealing with one of those enormous enlargements from the posterior and upper portion of the prostate, filling up practically one-third of the bladder I think it would be absolutely impossible by the perineal route to remove the whole of the mass and one can only gain access to it, by splitting the mucous membrane, for it seems to involve the trigone of the bladder. With respect to the use of the cystoscope in diagnosing these conditions, I have given it a very fair trial and should be very glad to continue if I could learn how to proceed in the examination successfully, particularly in those cases where the lateral lobes are of unequal size. I found it absolutely impossible to pass any form of cystoscope, even under an anæsthetic without drawing blood, no matter how carefully the instrument was lubricated, even with the application of a weak and finally a full strength solution of adrenalin chloride, except, of course, in those cases with a uniformly enlarged prostate in which you do not get deflection. With regard to the case mentioned by Dr. Shepherd, I expected to find obstruction due to the so-called median lobe enlargement, but the urethral orifice was apparently normal, and, on exploration, this diverticulum was discovered; it was not like an ordinary diverticulum due to separation of the muscular layers of the bladder wall with nothing but a thin mucous membrane and a little peritoneal connective tissue forming the sac, but a regular cavity with a firm rigid ring, almost cartilaginous and so extensive that I could not feel the bottom of the cavity. This had been filled with an antiseptic solution, 20 to 30 ounces, which continued to flow when the bladder was opened for a considerable time, and also explained the peculiar condition which was present while the patient's bladder was distended, viz., instead of being the ordinary pyriform swelling it presented a peculiar cordiform appearance which was very apparent.

The thirteenth regular meeting of the Society was held Friday evening, April 7th, Dr. J. A. Macdonald, President, in the chair.

GANGRENE OF FINGER.

E. W. Archibald, M.D., presented two living cases before the Society. One was that of a young German, who ran a needle into his finger. It became painful, and he was recommended to dip the finger in a supposed solution of carbolic acid every day, wrapping it up tightly after. This he did, and now some two weeks after the insertion of the needle he presents an extreme degree of gangrene of the finger. The carbolic acid "solution" was found to be almost a pure carbolic.

HYSTERICAL CONTRACTURE.

The second case was that of Hysterical Contracture (Lordosis) in a young man who had fallen from a telephone pole. He was under observation for a year and recovered, largely by suggestive treatment.

J. A. Hutchison, M.D.—This second case is interesting, especially so from a medico-legal point of view, and quite worthy of record for that reason alone. Some years ago I reported a case before this Society which was somewhat similar, the area effected being the cervical. The man had very definite fixation of the upper part of the muscles of the neck and shoulders, and remained in this condition for many months; there were evidently no nerve changes.

ABSENCE OF UTERUS AND VAGINA.

A. Lapthorn Smith, M.D., reported a case of Absence of Uterus and Vagina in a female. The record appears at page 343.

W. W. Chipman, M.D.—This case is an interesting one, and certainly is also a rare condition. One cannot say, however, that there was complete absence of the uterus, because, as I understand it, the left Fallopian tube, ending in a small knob, was present together with the left ovary. Of course, this condition, as many authorities state and as Dr. Smith has shown, is only diagnosable either at the time of operation or in the case of a post-mortem examination. But if you find a condition such as we have here, that is, one Fallopian tube, or sometimes even two, attached to the posterior wall of the bladder, frequently ending in a small knob, the condition is certainly one of arrested development. In cases such as these the sex is absolutely determined. The cases which are more frequent are those in which it is almost impossible to discern the sex: pseudo-hermaphroditism. They present points of extreme difficulty and extreme delicacy. Sir John Halliday Crume reported an instance of twins which had lived their lives till the age of 18 as girls, but when brought to him, after careful examination, they turned out to be boys.

They are now in Australia engaged in active life as boys. All such cases are extremely difficult to separate and diagnose, and in many cases much depends upon such diagnosis. In this case it is interesting to note the direction of the broad ligament, for it illustrates well the mode of development.

FRACTURES AS SEEN BY X-RAYS.

J. Alex. Hutchison, M.D., gave a lantern demonstration of fractures as seen by the X-rays. Dr. Hutchison exhibited some 75 specimens of fractures of various kinds, particularly those of the upper and lower extremities. These were taken from the different clinics of the Montreal General Hospital from the time of the inception of X-ray methods. Dr. Hutchison stated that, in giving this demonstration, he wished to emphasize the difficulty often experienced in making a diagnosis from an X-ray plate, and it was often left to the operator to settle the question; so much depends upon the angle at which the rays strike the fracture, or a part of the bone.

He thanked Dr. Wesley Mills for permitting him to use his apparatus, and Drs. Ricker, Hill and Nelson for their assistance in arranging the plates.

G. P. Girdwood, M.D.—Dr. Hutchison is to be congratulated upon his beautiful set of pictures. The skiagraphic room of the hospital receives a vast amount of material, but, so far as my experience goes, I would wish that surgeons who have charge of the cases would themselves attend the operation, to suggest and help in securing a picture under the best possible circumstances. The operator is very often expected to know and diagnose the condition of the injured limb, where the fracture is, what is the nature, and what would be the best point of view. As to the difficulty in the reading of these photographs, this can only be remedied by a thorough knowledge of anatomy, to begin with, and familiarity with every angle and curve. This can only be done by a first-class anatomist and surgeon.

Kenneth Cameron, M.D.—We are all so dependent on the X-rays in cases of fracture that the present demonstration is most timely. There is one condition, however, in which the X-rays are not of much value, that is in separation of the epiphyses, especially from the lower end of the radius. I used to think this a rare condition, but during the last winter I have come across half a dozen in the young, which, clinically, have all the symptoms of a Colles' fracture. In looking at the skiagraphs of this condition, it struck me that there was blurring of the epiphyseal line in the fractured condition, which one did not find in the

normal. I would like to ask if Dr. Girdwood could diagnose separation of the epiphysis from the skiagraphs. Certainly, the ones I have seen could not be so diagnosed without the clinical signs.

Dr. Girdwood.—A great deal would depend upon the age of the child. If the epiphysis has commenced ossification, and is much displaced, you can see it, but if ossification has not set in, the cartilage would not show a shadow sufficient to be distinguished from the normal.

The fourteenth regular meeting of the Society was held Friday evening, April 21st. The following programme was submitted:—

Living Cases:—(1) Nasopharyngeal fibroma, James Bell, M. D.; (2) Chronic Suppurative Otitis Media and Mastoiditis. Healed case following radical operation, W. G. M. Byers, M. D.

Case Report:—Hypernephroma of Kidney, James Bell, M. D.

Paper:—Surgical treatment of Chronic Suppurative Otitis Media, with special reference to the radical operation. Illustrated by lantern slides, W. G. M. Byers, M. D.

With the deepest and most profound reverence, one may well say, Thank God! The Legislature has adjourned *sine die!*—*California State Journal of Medicine,* April, 1905.

Prof. Denuce *(Gaz. Hebdom des Sciences Méd de Bordeaux,* Dec. 25) has discovered a simple method of preventing vomiting after administration of chloroform—the administration of water before the anæsthetic is given.—*Medical Review.*

It may be emphatically laid down that ship-board life is the very worst possible method of applying open-air treatment for consumptives in the light of experience gained from modern sanatorium results.—*Intercolonial Medical Journal of Australia.*

Mrs. Elizabeth Fleischman-Aschheim, one of our most expert radiographers, who has worked for all the hospitals and many physicians in this city, had to submit to amputation of her right arm recently as the result of the frequent exposures to the X-rays.—*Pacific Medical Journal.*

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXXIV. JUNE, 1905. No. 6.

THE INSANE IN CANADA.

PRESIDENTIAL ADDRESS: AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION, SAN ANTONIO, TEXAS, APRIL 18TH, 1905.

BY

T. J. W. BURGESS, M.D., Montreal.

Gentlemen:—

My first duty is to reiterate my thanks to you for having called me to this chair, a distinction I can attribute only to the fact, that in honouring me you sought to honour, not me alone but the Canadian members of the Association. "No man is born without ambitious worldly desires," says Carlyle, and surely there could not be a more laudable ambition than to become the President of this the oldest of American Medical Associations, a position of which Dr. John S. Butler said, on his elevation thereto, in 1870, "In my opinion, to be elected President of this Association, is the highest honour of the profession." Rarely, however, does gratified ambition bring peace of mind, and I, alas, have been no exception to the general rule. The thought of occupying a position that had been held by such intellectual giants as Woodward, Bell, Ray, Kirkbride, Butler and Earle, all members of the "glorious original thirteen," beside many other illustrious men, abashed me—made me fully conscious of my inability to fill it properly. Nor did the sense of my demerit lessen as the days rolled by. On the contrary, the long list of presidents, whose names are familiar to us because of their attainments in psychological medicine, loomed continually before my eyes, added to which the task of to-day's address haunted me like an ever-lengthening shadow. I had but one thought to reconcile me to the greatness your generosity had thrust upon me. It was that the kindness which prompted you to elect me as your president would be extended so far as to induce you to overlook my shortcomings, and that if, in the matter of the address, I could not like my predecessors in office clothe my thoughts in

"Choice word and measured phrase, above the reach of ordinary men,"

you would at least take the kindly will for the imperfect deed.

In my search for a topic upon which to discourse, I fully verified the words of Terence "Nullum est jam dictum quod non dictum sit prius." Everywhere I found the fields of medico-psychology so well harvested by my forebears that there was apparently nothing left for even a gleaner. Nevertheless a subject had to be selected, and I finally concluded that, as the oldest medical officer connected with the insane asylums of Canada, in point of length of service, I could not do better than tell you something about the development of our Canadian asylum system, the status of the insane in our Dominion, and what, in my estimation, are some of our most crying needs for the betterment of those so justly styled "the most unfortunate of all God's afflicted ones."

EVOLUTION OF THE CANADIAN ASYLUM SYSTEM.

Of the number or condition of the insane in Canada under the French regime, that is prior to its accession to England in 1763, I have been able to learn little or nothing. Doubtless their treatment differed in nowise from the cruelty shown them in all other countries at the same period. That they were not totally neglected is manifested, however, by the fact that, in 1639, the Duchess d'Aiguillon, niece of Cardinal Richelieu, founded the Hotel Dieu of Quebec for the care of indigent patients, the crippled, and idiots. As here employed, the term idiot probably refers to all forms of mental disorder, acquired as well as congenital, and the creation of this establishment is especially noteworthy inasmuch as it was not only the first move toward the proper care of the insane, but was the first hospital instituted in North America. Four years later, namely in 1643, Mademoiselle Mance founded the Hotel Dieu of Montreal to meet the same requirements.

For well nigh three-quarters of a century after the establishment of British rule, the condition of the insane in the various Crown Colonies, which now make up the Dominion of Canada, was deplorable in the extreme. Each county seems to have cared for its insane as best it could by confining them in almshouses and jails. The poor lunatic did not appeal to the sympathies of the public,—a workhouse was good enough for him if harmless, a prison his proper place if dangerous. The thought that he might be cured, and that no effort should be spared to cure him, occurred to few if any. Bereft of man's noblest attribute, the mind, lunatics were regarded as little better than brutes, and were too often treated accordingly. While falling short of the Napoleonic Code, published in 1804, which openly classed the insane with beasts, and ordered the punishment of those who allowed "the insane and mad animals to run about free," the law in Canada deemed them at least on a par with

CENTENARY CHURCH, 1839.

St. John, N.B.

The building with smoking chimney, in rear of church, was Canada's first Asylum for the Insane. Opened 14th November, 1835.

criminals. In proof of this, witness an act, in force as late as 1835, which authorized any two Justices of the Peace, without any medical certificate, "to issue a Warrant for the apprehension of a lunatic or mad person, and cause him to be kept safely locked in some secure place directed and appointed by them, and, if they deem it necessary, to be *chained.*"

The first of the old British North American colonies to make special provision for its insane was New Brunswick, by the conversion, in 1835, of a small, wooden building in the city of St. John, originally erected as a cholera hospital, into an asylum for lunatics. This institution, the first of the kind in Canada, continued in operation for a little over thirteen years, under the medical supervision of Dr. George P. Peters, a native of St. John but a graduate of Edinburgh University.

Dr. Peters had no previous experience in the care of the insane, but, being energetic and deeply interested in the welfare of his charges, did exceptionally good work considering how he was handicapped. That he was in advance of his day and fully recognized the importance of special training for the proper treatment of mental diseases, a fact so often lost sight of by governments and their appointees, is evidenced by his urging, though vainly, the Legislature to get a physician from England, one trained in the best schools of psychiatry, to take charge of the new asylum. The difficulties he had to encounter were many, not the least being one that is equally common to most of us at the present day, that of finding suitable nurses. On this point he quaintly reports:—"I find it very difficult to secure proper attendants, especially for the female patients. Those who apply for the place are coarse and ignorant, their only qualification for the position being good muscular development, and absence of all proper sensibility."

The following record preserved in the Sessions of the Peace minute-book gives a good idea of the results attained by Dr. Peters during the first thirteen and a half months of his incumbency. Of the thirty-one admissions, it says, "There have been discharged—cured, six; improved, five; to friends, not improved, two; died, four. Of the remaining 14, one is much improved, two perceptibly improved and 11 without any visible improvement." Some of the details of the itemized accounts, contained in the same volume, are highly suggestive of the times and of the methods of treatment, in which blood-letting and restraint must have played a considerable part, and bathing and light been luxuries.

"W. McBay for twelve hogsheads of water (for one month), one pound, fifteen shillings.

W. Hammond for thirty pounds rush lights, tenpence per lb., one pound, five shillings.

Harvie and Allen for eight tin bleeding cups and one tin pan, seven shillings and sixpence.

D. Collins (saddler) for three hand mufflers, one pound fifteen shillings.

G. T. Ray for twelve straight waistcoats at twenty shillings each, twelve pounds."

In 1848, this temporary refuge, the pioneer Canadian asylum, was abandoned, the inmates, ninety in number, being transferred to the present institution, the erection of which had been begun two years previously.

Ontario, or, as it was then called, Upper Canada, was the next of the provinces to make a movement towards providing for its insane, the old and recently abandoned jail at York, now Toronto, having been fitted up and opened as a temporary asylum in 1841. Prior to this, numerous attempts had been made in the House of Assembly toward the organization of an asylum, the Government going so far, in 1836, as to appoint a Commission to visit the United States for the purpose of obtaining information on the subject. The Chairman of this Commission was Dr. Charles Duncombe, who afterwards, during the rebellion of 1837, became the leader of the rebels in the western part of the province, and only saved his neck from the hangman's noose, on the defeat of the movement, by making his escape, disguised as a woman, across the Detroit River into Michigan; this despite the fact that a reward of £500 had been offered for his apprehension. Dr. Duncombe's report is particularly interesting to us, because he therein gives an account of his visit to Worcester Asylum, Massachusetts, then under the superintendence of Dr. Samuel B. Woodward, who eight years later became the first President of this Association, of which he was also one of the originators. His institution was the one, of all those inspected, that best met the approval of the Commission, and the one the general plan of which they advised should be followed. In concluding his report, Dr. Duncombe thus interestingly outlines his views on the subject of lunacy and the object of the proposed structure:—"The building is not designed for the cure of the ordinary diseases of the body, but 'to restore the disjointed or debilitated faculties of a fellow creature to their natural order and offices, and to revive in him the knowledge of himself, his family and his God.' The subject of lunacy has been until of late years less perfectly understood than any other complaint known to our country

that is at this moment successfully treated, but thank Heaven that the disease of an organ of the mind is no longer considered a crime subjecting the unfortunate subject of it to imprisonment, punishment and chains, and that with the exception of this Colony no other portion of America has their insane confined in their jails, and I am well satisfied this will not be the situation of these unfortunate persons longer than until their number and present cost of support is known, and the legislature have time to provide a suitable asylum for their relief."

The make-shift asylum, into which the old jail had been converted, was placed in charge of Dr. Wm. Rees, who had long urged upon the Government the necessity for such an establishment, and continued in use up to 1850. At that date the patients were transferred to the present Toronto asylum, which, for twenty-two years after, was the field of labour of the venerable Dr. Joseph Workman, to whose wisdom much that is best in the present system of caring for the insane in Canada can be traced.

Kingston Asylum, generally known as Rockwood Hospital, was the second asylum born in the province of Ontario. It had its birthplace in the stable of the old Cartwright mansion, which, in 1856, was fitted up for the reception of twenty-four female patients. Like its successor, the present structure, opened in 1862, it was originally designed for a criminal lunatic asylum, and as such the institution remained in charge of the Federal Government, an adjunct to the Penitentiary, until 1877. In that year it was purchased by the local legislature, and became one of the ordinary provincial establishments.

London Asylum, the third Ontario asylum in point of age, was, when opened in 1859, originally located in the old military barracks at Fort Malden on the Detroit River, and formed a branch of the Toronto institution, which had become congested. In 1870, the present hospital, at London, having been completed, the patients were transferred there.

Of the other five public asylums in Ontario, that at Hamilton was originally built for an inebriate asylum, but was never used as such, being utilized instead for the reception of the insane, and opened in 1879. Mimico Asylum was first occupied in 1890, Brockville Asylum in 1894, Cobourg Asylum in 1902, and Penetanguishene Asylum in 1904. The Cobourg institution, for female chronic patients, was created by the conversion of Victoria College, the scholastic headquarters of the Methodist community prior to federation with Toronto University, into a hospital for the insane; and the Penetanguishene Asylum, which is for chronics of both sexes, was formerly a reformatory for boys.

Ontario also possesses an asylum for idiots. It is situated at Orillia,

where it had its inception, in 1876, in a building originally designed for an hotel. This structure was replaced by a new and modern establishment in 1887.

In the Province of Lower Canada, now Quebec, the Quebec Lunatic Asylum, formerly known as Beauport Asylum, is the oldest of the institutions for the insane, the progenitor of the present structure having been opened, during 1845, in the old manor-house of the Seigneur of Beauport, which stood about a mile from the present establishment. Its creation was due to Dr. James Douglas, an uncle of my immediate predecessor in this chair, Dr. Joseph Morrin and Dr. Charles J. Fremont, but it is now the property of the Sisters of Charity.

The second of the Quebec asylums, L'Hopital St. Jean de Dieu, or, as it is usually called, Longue Pointe Asylum, is situated a few miles east of Montreal, and also belongs to the Sisters of Charity. It originated in a very humble way in 1852, its capacity at that time not exceeding twenty-five patients. This being found quite inadequate to meet the ever-increasing demands upon their charity, the sisters, with the sanction of the Government, determined to take up the work of caring for the insane on a greatly enlarged scale. The result was the erection of a new St. Jean de Dieu Asylum, which was opened in 1875. This institution was completely destroyed by fire in 1890, no less than seventy-five patients and five sisters losing their lives in the conflagration. Undeterred by this disaster, the Sisters lost no time in beginning the erection of the third St. Jean de Dieu Asylum. This, the present establishment, which is fully up to date in construction and equipment, was opened in 1901.

The third Quebec institution, rightfully called the Protestant Hospital for the Insane, though generally spoken of as Verdun Hospital, was founded by a number of the charitably disposed Protestant citizens of Montreal for the relief of their co-religionists then confined in Beauport and Longue Pointe asylums. It was opened for the reception of patients in 1890.

Quebec has in addition two institutions which receive idiots as well as some aged and infirm paupers. These are L'Hospice St. Julien, located at St. Ferdinand d'Halifax and Baie St. Paul Asylum, situated at Baie St. Paul. Both belong to the Sisters of Charity, the former having been opened for the reception of idiots in 1873, the latter in 1890.

Prince Edward Island stands fourth, and Nova Scotia fifth, on the list with regard to the date of beginning special provision for the insane. The hospital of the former dates back to 1847, and of the latter to 1858, since which time Nova Scotia has increased its accommodation for the

mentally defective by the creation of a system of county asylums, and combined county asylums and poorhouses. An interesting point in connexion with the Nova Scotia Asylum is that to it pertains the honour of having had its site selected by the well-known philanthropist, Miss Dix, of whom it is said in Tuke's "Dictionary of Psychological Medicine":—"Although, in every country, men and women and the medical profession have been ready to promote the interests of the insane, the name of Dorothea L. Dix stands foremost among all. Her efforts in improving the condition of the insane were not confined to her native State of Massachusetts, but extended to other States and distant lands. Her life was devoted to their interests, and it is stated that no less than thirty asylums owe their establishment directly or indirectly to her persistent efforts."

The first Manitoba Asylum, now located at Selkirk, was originally established, in 1871, at Lower Fort Garry, in connexion with the penitentiary, one of the old stone storehouses of the Hudson's Bay Company, formerly used for the confinement of Lepine, the notorious Louis Riel's Adjutant-General, having been fitted up for the purpose. The second asylum, situated at Brandon, began work in 1891.

The year 1872 witnessed the birth of the British Columbia institution, when an ancient wooden building on the Songhees Indian Reserve, outside the city of Victoria, originally built for a small-pox hospital, was re-opened to receive lunatics. The population having outgrown these primitive quarters, it was decided to erect a new asylum on the mainland, close to the town of New Westminster. This was done and the patients removed thereto in 1878.

Of the superintendents connected with the bygone struggles of these beneficent institutions much might be said, but the limited time at my disposal forbids the eulogiums they so justly deserve, even were my pen equal to the task. No words of mine could do justice to such men as Dr. Workman, easily *primus inter pares*, and fittingly styled by Dr. Tuke, "The Nestor of Canadian alienists"; Dr. Henry Landor, whose rare qualities of heart and mind fitted him so eminently for his position; Dr. R. M. Bucke, to whom is due the introduction of the non-restraint system into Canada; Dr. W. G. Metcalf, who by his sad and untimely death added another to the goodly list of physicians who have perished at the hands of those whom they sought to benefit; Dr. J. R. DeWolf, who was foremost in the early care and treatment of the insane in Nova Scotia; Dr. E. E. Duquet, who died worn out by his labours in striving to reform the Longue Pointe Asylum; and Dr. A. Vallée, whose advanced views did so much to improve the Quebec Asylum. The blessed results

of the labours of such men can never be fully estimated, their works being truly—

"Deeds which are harvest for Eternity."

Status of the Insane.

At the present time Quebec is the only one of the provinces of the Dominion in which there is no state institution for the care of the insane. Though vastly improved in every respect and much more strictly supervised by the Government than when Dr. Tuke visited them, in 1884, and so graphically portrayed the then existing evils, the two largest hospitals, St. Jean de Dieu and Beauport, are still proprietary establishments, and, as such, still open to the criticism thus forcibly expressed by that distinguished alienist in his work, "The Insane in Canada and the United States." "Far be it from me to attribute to these Sisters of Charity any intentional unkindness or conscious neglect. I am willing to assume that they are actuated by good motives in undertaking the charge of the insane, that they are acute and intelligent, and that their administrative powers are highly respectable. Their farming capacities are, I have no doubt, very creditable to them. It is not this form of farming to which I have any objection or criticism to offer. In the vegetable kingdom I would allow them undisputed sway. It is the farming out of *human* beings by the Province to those or any other proprietors against which I venture to protest. . . . . It is a radical defect—a fundamental mistake—for the Province to contract with private parties or Sisters of Charity for the maintenance of lunatics. Whatever may be the provision made by private enterprise for patients whose friends can afford to pay handsomely for them, those who are poor ought to have the buildings as well as the maintenance provided for them by the Legislature. They are its wards, and the buildings in which they are placed should belong, not to private persons, but to the public authorities, with whom should rest the appointment of a resident medical officer."

No less pronounced in his condemnation of the "farming out" system is a later writer, one of the greatest authorities on all appertaining to insanity and the care of the insane, Professor Kraepelin. This world-renowned alienist says of it, in an article published some five years ago:—"It is not only unworthy of the State, but in the long run is also dangerous to entrust the care of such institutions to promoters, who are working only on their own responsibility, be they laity or clergy. The best ordinances of State supervision cannot do away with the danger which attends the transference of the insane from the care of the public officials

to that of private individuals. Even if State inspection were well carried out, which cannot be guaranteed, only the more apparent abuses could be guarded against. The management of the institution would still be carried out in accordance with the particular views and wishes of those who were in charge and, as a rule, to the disadvantage of the patients."

Following the publication of Dr. Tuke's article, the Medico-Chirurgical Society of Montreal held a meeting, at which, among others, the following resolutions were unanimously passed:—

"That the 'farming out' or 'contract' system either by private individuals or by private corporations has been everywhere practically abandoned, as being prejudicial to the best interests of the insane, and producing the minimum of cures.

"That, in the opinion of this Society, all establishments for the treatment of the insane should be owned, directed, controlled and supervised by the Government itself, without the intervention of any intermediate party."

Spite of these and other vigorous protests the system remains unchanged, and before Quebec can be counted in the foremost line, where it ought to be, the province must own as well as supervise its institution for the dependent insane.

One outcome of the furore excited was, however, the founding of the Protestant Hospital for the Insane, an incorporated charitable institution, which, while paid by the Government for the maintenance of public Protestant patients, is safeguarded by the leading clause in its charter of constitution. This stipulates that the conduct of the establishment shall be vested in a board of management elected by the governors, and that all moneys received by the corporation, from whatever source, shall be expended upon the institution and its inmates. As a matter of fact, ever since the opening of the hospital, the per capita cost of public patients therein has not been less than fifty per cent. more than the Government allowance for their keep, the difference having been made up by the revenue derived from private patients and the bequests of the charitably disposed.

The Province of Nova Scotia, though possessed of as well managed a State asylum as could be desired, is yet behindhand in that it has, since 1886, sanctioned the erection of county asylums, and, in many cases, combined county asylums and poorhouses. To these can be transferred the harmless insane from the provincial institution, and to them can be sent direct idiots, non-violent epileptics, and cases of chronic insanity

refused admittance on statutory grounds to the State asylum. At the present time there are eighteen of these structures, which, according to the Report of Public Charities for 1904, house sane adults, children, insane patients, imbeciles and epileptics. Each is governed by a committee, the immediate management being entrusted to a keeper and a matron, and there is a visiting medical officer attached. These establishments have been erected in pursuance of a plan outlined by Dr. Reid, formerly superintendent of the provincial asylum, though a Nova Scotia friend of mine, well acquainted with the system, contends that it was invented by the devil. The scheme was necessitated by the pressing need of additional room for the insane, and the financial inability of the province to undertake the erection of another public hospital. It is only fair to Dr. Reid, however, to state that this was but one of four alternative suggestions made by him, and that it was the one he considered the least desirable, although the cheapest way to provide the required accommodation.

That county care is cheaper I will not gainsay, but does it best meet the demands of humanity, which, after all, is the true standard to be adopted by any right-thinking community? That it does not seems to be the general trend of the most advanced scientific opinion, and the following resolution, adopted at the sixth meeting of this Association, held at Philadelphia in 1851, still holds good.

"Resolved; that it is the duty of the community to provide and suitably care for all classes of the insane, and that in order to secure their greatest good and highest welfare, it is indisputable that institutions for their exclusive care and treatment, having a resident medical superintendent, should be provided, and that it is improper, except from extreme necessity, as a temporary arrangement, to confine insane persons in county poorhouses or other institutions, with those afflicted with or treated for other diseases or confined for misdemeanors."

Not a few of the chronic insane are as difficult to manage as the acute, and such being the case, it is hard to imagine any system of county care where abuses will not creep in as a result of the desire to lessen the per capita cost and the absence of constant medical supervision. As practised in the State of Wisconsin, it seems to be as well conducted as it is possible for such a system to be, and yet Dr. Burr, our worthy Vice-President, who is a just and honest man as well as a careful observer, after a personal inspection of the system there, published, in the October, 1898, number of the *American Journal of Insanity*, a scathing denunciation of its inefficiency.

Many of the worst horrors connected with the treatment of the insane during the last half century were consummated within the walls of county almshouses. In New York, where the practice of transferring cases who failed to recover in a certain time from the Utica Asylum to the county poorhouses was in vogue for nearly thirty years, and where the county asylum system flourished for over eighteen years, the abuses which seem to be inseparable from almshouse and county arrangement so aroused public opinion that both methods were abolished. By the passage of the State Care Act of 1890, an act which affirms that the dependent insane are the wards of the State, and that their interests and maintenance should be confined exclusively to the State, New York justly earned the proud encomium that, "The leading chapter in the (past) century's history of the care and treatment of the insane in America will be the humane and progressive record of the Empire State."

The State of New Hampshire has also lately recognized the injustice of this method of caring for the insane, and, in 1903, passed an act abolishing county care, and providing for the removal of all lunatics confined in county almshouses to the State hospitals within a period of six years.

That those connected with and so best qualified to judge of the working of the Nova Scotia system are not themselves enamoured with it may be judged from the 1903 Report of Public Charities. Therein, the Inspector, Dr. George L. Sinclair, an alienist of repute and a former superintendent of the Provincial Hospital, says:—

"The plan of county care adopted in this province has many grave objections. In a properly equipped and well-officered local asylum, reserved for the exclusive use of insane or imbecile inmates, the objectionable features are fewest. The scheme of associating in one house both sane and insane persons is the most objectionable and unsatisfactory.

"Unfortunately our law permits this to be done, provided the building is made suitable for both classes and for both purposes to the satisfaction of the Governor-in-Council. The difficulties to be overcome to make such a plan of care unobjectionable pertain quite as much to the structure of the municipal mind as to that of the building.

"It is most unfair to the sane members of such a household, whose only affliction is poverty, to compel them to associate with the insane and imbeciles, who are not only irresponsible, but may be a source of positive danger to their companions in misfortune, and it is distinctly unjust to the insane inmates to attempt to care for them with the limited oversight and attention which the small staff of an almshouse can give.

"I have yet to find a single keeper or matron of an asylum to which the mental defectives are sent to associate with the paupers, whose experience in looking after the two classes is sufficient to give the opinion any value, who does not think the mixing of the two kinds of inmates most undesirable. When it is done there is either a dangerous amount of liberty granted the defectives or they are isolated and secluded to an extent that means positive neglect, and leads to distinct deterioration and the formation of bad habits. It cannot be otherwise. The staff of an ordinary almshouse usually consists of a keeper and a matron. The former has charge of the farm and the latter of the house-keeping. When at his work the keeper must either take the insane men with him or leave them at home. The first is often impracticable, and the second unsafe unless the patient is locked up. This more or less frequent seclusion always has an evil effect in causing the insane person to fall into bad habits. Sometimes most objectionable and severe mechanical restraints are used, and nothing but harm results."

In the Province of New Brunswick it is much to be regretted that the Government, on account of the overcrowded condition of the provincial hospital, is contemplating a resort to the Nova Scotia system. At the last session of Parliament legislation was passed providing for the examination of all patients therein by a Commission composed of the medical superintendent and two other doctors. When the work of the Commission, which began its labours in November last, is completed, a report is to be made to the Government with a view to the selection of those who, being supposed to be harmless, can be sent back to their friends or to the county almshouses. To carry out such retrograde legislation will be to sully the record of a province which has heretofore always steadfastly declared against the incarceration of lunatics, even temporarily, in prisons or poorhouses—a province which can boast with pride of having been the first of the British North American colonies to provide special accommodation for its dependent insane.

At present, in New Brunswick, perhaps the gravest existing defect in connexion with the insane is the method, or rather lack of method, of commitment to the provincial hospital. The safeguarding of the liberty of the subject seems to be little heeded, and a patient can be conveyed to it with only a line from a doctor. No thought is given to advising the hospital authorities beforehand that a patient is coming, and often no history whatever of the case is furnished. The medical superintendent, however, informs me that this matter is to be remedied at once, and that the present year will see the manner of commitment more in consonance with the modes adopted in other civilized countries.

Ontario, as the wealthiest of the Provinces, has of course been able to outstrip the others, and in its care of the insane has always endeavoured to keep up with the advance of science. Its asylums are State institutions in the fullest sense of the word. In the majority of cases the patients are maintained entirely at Government expense; in other cases, where able to do so without hardship, the friends are charged a rate that covers the bare cost of keep.

While all its hospitals are good, Rockwood is certainly the foremost, ranking to-day among the most advanced institutions for the treatment of the insane in America. Whether it be that its presiding officer has a more persuasive tongue, and so can better influence the Government, I cannot say, but assuredly it has accessories that are elsewhere lacking—to wit, a beautiful home for nurses, and several small cottages for the segregation of tubercular patients. The varieties of employment provided for the patients are there, as they should be, numerous and diversified, and physical culture classes are one of the features of the establishment. In addition, those who have a taste for music are instructed in it under a qualified teacher, and there is also a school modelled after that in the Utica Asylum. At Rockwood, too, it is worthy of record, was established Canada's first training school for asylum nurses, and the first separate building, or infirmary, on the continent, for the treatment of lunatics afflicted with additional ailments.

Prince Edward Island has a provincial hospital for its insane, but idiots and imbeciles are sheltered in the provincial poorhouse, those who become dangerous being transferred to the insane hospital.

In Manitoba and British Columbia the asylums are State institutions, and well conducted, thought at present sadly hampered by the constant and pressing necessity of providing sufficient room, owing to the mass of immigrants that has been flowing into those provinces during the last two or three years. The Manitoba hospitals receive imbeciles, but idiots are sent to the Home for Incurables, also a provincial institution, located at Portage la Prairie. British Columbia has no special provision for idiots or imbeciles. When utterly unmanageable at home they are received into the insane asylum.

The Northwest Territories having no hospitals of their own, by special arrangement with the Dominion Government, all cases of insanity occurring in those districts are cared for in the provincial asylums of Manitoba.

Number of Insane.

In 1901, according to the census of that year, there were in the Dominion of Canada 16,622 persons of unsound mind, being a ratio of

3,125 per thousand, or about one in every 319 of a population numbering 5,318,606 souls, exclusive of the unorganized territories. Of these 16,622 defectives, 10,883 were inmates of asylums or other institutions, making a percentage of .642 under care.

The Provinces as regards the number of their insane stood as follows:—Prince Edward Island, 361, a proportion of 3.496 per thousand; Ontario, 7,552, or 3.459 per thousand; New Brunswick, 1,064, or 3.213 per thousand; Quebec, 5,297, or 3,212 per thousand; Nova Scotia, 1,403, or 3.052 per thousand; Manitoba, 464, or 1.818 per thousand; British Columbia, 301, or 1.684 per thousand; Northwest Territories, 180, or 1.132 per thousand.

With respect to custodial care, British Columbia ranked first, having under care, at the close of 1901, no less than 94 per cent. of the total number of those mentally incapacitated. Manitoba came next with 77 per cent. in safe-keeping. Nova Scotia stood third with 71 per cent. sheltered. Ontario was fourth with 69 per cent. in asylums. Prince Edward Island was fifth with 61 per cent. provided for. Quebec and the Northwest Territories were equal with 58 per cent. under care, and New Brunswick was eighth with 52 per cent. housed.

The following table shows the changes indicating increased custodial care, or otherwise, on the part of the several provinces, in the decade extending from 1891 to 1901. By this it will be seen that there has been a marked advance in all with the exception of New Brunswick, which remains unchanged.

Province.	In Asylum, 1891.	In Asylum, 1901.
British Columbia	90 per cent.	94 per cent.
Manitoba	55 " "	77 " "
New Brunswick	52 " "	52 " "
Nova Scotia	36 " "	71 " "
Ontario	58 " "	69 " "
Prince Edward Island	38 " "	61 " "
Quebec	50 " "	58 " "
Northwest Territories (Housed in Manitoba Asylums)	..	58 " "
Canada	54 per cent.	66 per cent.

Increase of Insanity.

Spite of the provision made for the care of the insane, from every province comes the cry for additional accommodation. Year by year

the number of lunatics, imbeciles and idiots to be supported and cared for by the State is being largely augmented, and it has become a burning question whether something cannot be done to lessen an evil which imposes upon the community an enormous load of taxation for the maintenance of a large and constantly increasing multitude of those mentally afflicted. Canada, in common with the rest of the civilized world, has of late years shown a decided increase in the percentage of her insane population. Of course it is easy to be led astray by statistics compared without just qualification. The very agencies created for the care of the insane lead to an apparent increase in their number. With well appointed asylums conducted on enlightened lines, aided by Government grants and private charity, hundreds of patients, who might otherwise be uncounted, leave their homes to swell the enumeration of the insane. Still, with all allowance made for this, it is the consensus of opinion that insanity is on the increase in Canada as elsewhere. That such is the case is fully borne out by the census returns, which, though lessened in validity by the fact that the figures they furnish are in great measure dependent on voluntary information, are yet in this case a fair index of the true state of affairs, because any false statements made would be in the line of lessening the number of defectives. From this source we find that while in 1891 there were 13,342 insane persons in a population of 4,719,893, in 1901 there were 16,622 in a population of 5,318,606, being an increase, in ten years, of nearly twenty-five per cent. in the number of lunatics, whereas the increase in the total population was less than thirteen per cent.

The causes of this increase are manifold. The methods of modern life and the modern race for wealth undoubtedly play an important part in it. Our high-pressure civilization does not come to us without attendant woes. With the change and increased comfort in the mode of life of the great bulk of the people, their susceptibilities have been augmented, and their nervous systems have been laid more open to the unkind influences of material and moral forces. But while these and other causes play a part in the production of mental disorder, it is a small one in comparison with that played by heredity. From time immemorial it has been recognized that the great predisposing cause of insanity is hereditary taint, and as time rolls on, and we are able to make more careful inquiry into the influence of hereditary predisposition, the truth of this old-time belief becomes more and more evident. Unfortunately we are not in a position to say exactly what amount of the mental obliquity met with is due to transmitted weakness. The statistics of heredity vary widely, and this variation is chiefly in direct ratio to the

prevarication practised by the relatives of the insane. Not one of us but is well acquainted with the way in which people, even in the lower ranks of life, endeavour by every means to keep us ignorant of what they consider to be a stigma on the family. Almost every authority on mental diseases has commented on this, one writer going so far as to compare the difficulty experienced in getting at the truth in such cases to that which might be expected in dragging from an erring woman a confession of her frailty. Why brain disease should be regarded as more disgraceful than disease of the lungs or any other organ of the body, or why the fact of insanity being in a family should be looked upon by the public as tantamount to an acknowledgment of criminality is hard for us to grasp. Such, however, is the fact, and until the masses are educated out of such erroneous beliefs, friends will continue to lie about their antecedents most unblushingly. Often I have known cases where the relatives have positively asserted that there was no trace of insanity in their family history, and often I have afterwards discovered that it had been well marked for generations. I well remember a lady, widely known for her Christian principles, coming to see me about receiving her daughter as a patient. A prognosis in the case was of importance, and I was asked to give as definite a one as possible. Naturally, I asked as to any possible hereditary taint. My lady was firmness itself in her denials. In the course of further conversation, however, she happened to mention that her brother, who had been very fond of the insane girl, was dead, and added, "Perhaps it's as well after all that he is." It struck me at once that there must be something behind this expression of opinion, and my question, "Why so, Madam?" elicited the answer, "Well, doctor, you see for over a year before my brother shot himself he was always worrying about Mary's future welfare." Needless to say, the hospital registers showed heredity as a definite predisposing factor in the case.

But it is unnecessary that I should dwell upon the question of heredity as a cause of the increase of insanity. It and the marriage question were fully and ably discussed by Dr. Blumer in his presidential address delivered at Washington two years ago. I shall but strengthen, if that be possible, what was then said by a quotation. It is from an address on the prevention of insanity given by Dr. G. F. Blandford, as President of the Psychological Section of the British Medical Association, in 1894. On that occasion Dr. Blandford stated:—"I have long been of the opinion that insanity is to be prevented chiefly by limiting the propagation of this most fearful disease through the union of affected persons. I am convinced that the only way to really diminish and finally stamp

out insanity is by so educating public opinion, that those who have been insane or are threatened with insanity shall, in the face of such public opinion, abstain from bringing into the world children who must certainly contain in them the potentiality of insanity, and so will hand on the heritage from generation to generation till the race dies out."

Instead, let me call your attention to another topic, briefly referred to by Dr. Blumer, in the line of prevention of the increase of insanity—the exclusion of defective immigrants. I do so for two reasons. Firstly, because during the past two years the influx of strangers into Canada has been so enormously increased; and secondly, because Canadian immigration laws being much less stringent than those of the United States, our land is being flooded by a class of degenerates, many of whom, if not already insane, soon become so.

That a country so vast as ours should be much more densely peopled is a "consummation devoutly to be wished," but the question of number, desirable as it may be, is secondary to the character of the people who are being added to our population. The sturdy agriculturists and artisans of the British Isles, healthy alike in body and mind, always furnish a welcome addition to our ranks, but unhappily quite a large number of the immigrants brought to us are of a low standard of mentality, some of them even having been inmates of asylums before coming to this country. Such a condition, amid new environments and under new conditions of existence, is almost sure to lead to mental strain and insanity. The result is that these incompetents, many of them consisting of the scum and dregs of an overcrowded European population, are crowding our provincial hospitals, especially those of Ontario, Manitoba and British Columbia, to which provinces immigration has been largest, and those contiguous to large seaports, such as Montreal. Most of our institutions have a larger *percentage* of foreigners than is found among the native population, and while the greater number of the foreign-born inmates are legitimately there, having broken down mentally after they had earned a residence, there is in every asylum a proportion which should never have been brought to our shores. Some of these have come of their own accord, but it is evident from the statements of the patients themselves that in certain cases parochial boards, benevolent societies, municipalities and even relatives have sent out persons simply as the cheapest way of getting rid of them. The cost of a ticket is small compared to a lifetime's maintenance in an asylum, a poorhouse, or at home. The late Dr. R. M. Bucke, in giving his evidence before a Commission appointed to inquire into this subject, thus forcibly and truthfully ex-

pressed himself:—"There are Associations formed in England for bringing out to Canada what are called gutter children from the slums of England, Scotland and Ireland. Thousands are brought out by these organizations. This is scandalous, and should not be allowed to go on. These people might as well collect small-pox and typhoid fever and send them out. It is just adding so much more to the number for which we have to provide, because so many of them are degenerates." But a few months ago it was proposed in London to form an organization for the emigration, on a gigantic scale, of British pauper babies and young children, and a meeting was convened at Mansion House under the auspices of the Lord Mayor to discuss the subject. Canadians generally and naturally object to the establishment of British workhouse farms in Canada under the control of British poor law guardians for the reception of English foundlings, and, I am thankful to say, the Canadian Government withheld its approval of the scheme.

As typical of the class of persons sent out by their friends to get rid of them, let me read you a description of a batch of these defectives who had become hospital residents and were deported to Liverpool. It is from a report of the asylum in British Columbia, where this custom has been very common, I suppose on the principle that the farther away a ne'er-do-weel is shipped the less likelihood of his return. "All these cases were illustrations of a practice too much in vogue in Great Britain, of shipping off to the colonies weak-minded young persons who are unmanageable at home, and unable to make a career for themselves, or earn a livelihood there. 'He has continued his wild and reckless conduct, and has now been shipped off to the colonies,' is a phrase made use of in the *Journal of Mental Science*, in a description of a case of the kind now in question. But if a patient of the sort here described is unable, with the assistance and supervision of his friends and relatives, to steer a straight course and make a position for himself in the Old Country, still less is he likely, when left to himself, to be able to cope with the struggles and difficulties of Colonial life. Of the five cases above mentioned, in one the patient was of feeble intellect and the insanity strongly hereditary, in another the patient was obviously weak-minded originally, a third was a pronounced epileptic with consequent mania, and two others, a brother and sister, suffered from strong family taint. The brother had been previously for three years in an English County Asylum, and the sister had suffered from an attack of insanity before coming out here. The brother had only been four days in the Province when he again became insane, and was sent to the asylum. He was

two years and one month in the Province, the whole of which time, except four days, he spent in the asylum at the expense of the Government.....

"It is hard upon the Colonies that the mother country should 'ship off' these waifs and strays, these victims of 'borderland insanity,' to become, as they almost inevitably must do, when thrown on their own resources out here, confirmed lunatics, who have to be maintained at the expense of the community."

That Canada is being made a "dumping ground" for the degenerates of Europe it needs only a glance at our general and asylum statistics to show. Few, however, realize the extent of the burden thus imposed upon our charities. Only those whose duty brings them in contact with the defective classes can fully grasp how urgent it is that greater restrictions should surround the admission of undesirable immigrants. Even conservative England, which has always prided itself on being held wide open as a refuge for the poor and oppressed of all nations, is becoming aroused to the necessity of raising a barrier against unrestricted immigration. The evils have become so palpably evident there, during the past few years, that the average Briton, once heartily in favour of admitting any and every one to his country, is now crying out against it, and the last Royal Commission on Alien Immigration, which was appointed in 1902, and presented its report last autumn, recommended the establishment of an immigration department, similar to that of the United States, for the purpose of debarring and repatriating "undesirables."

In proof that what I have said is no exaggeration of the ill-effects attendant upon immigration insufficiently safeguarded, let me call your attention to some figures bearing on the subject. By the census of 1901, the population of Canada was 5,371,315, the number of foreign-born being 699,500; the total of the insane was 16,622, and of these 2,878 were foreigners. From these returns it will be seen that a little over thirteen per cent. of the general population—that is to say, the imported element—furnished over seventeen per cent. of so-called Canadian lunacy. Stated in another form, if the native Canadians alone are considered, there is one insane person in every 339 of the population; while the proportion among the foreign element alone is one in every 243.

If further evidence were needed, I would say that during the year 1903 there were admitted to Canadian asylums 2,213 insane persons. Of this number 1,726 were born in Canada. The remaining portion, 487, representing 22 per cent. of the admissions, was foreign born. At

Verdun 2,048 patients have been received since the opening of the establishment, and of this number forty per cent. were of foreign birth. In the same institution there are at the present time no less than thirty persons, in a population of four hundred and sixty, who, if subjected to anything but the most cursory examination, would never have been allowed to set foot in the country.

The cause of this load being foisted upon us is not hard to find. It lies in the laxness of our immigration acts, which do not demand a certificate of good bodily and mental health from each person landing, and limit the period during which such parties may be deported to one year.

No effort should be spared to relieve the Dominion of such an incubus, and the remedy is in our own hands. It consists in the passing of stringent laws providing for a full knowledge of the past history of every alien seeking our shores. The true place to prevent the coming of the dangerous immigrant is not at the port of entry, but at that of departure. Each person preparing to emigrate to Canada should be rigidly examined by salaried medical officers, appointed by the Dominion Government, as to his mental fitness at the time of examination, and should also show proof that he has never been insane or epileptic, and that his parents have never been affected with insanity. If found to fulfil all the legal repuirements, a sworn certificate, containing his full personal description and vouching for his mental and physical health, should be given him. Without such a certificate he should not be allowed to land, and the vessel bringing him should be obliged to take him back on its return trip at the expense of the owners. The health officers at our ports should, in addition, be clothed with authority to reject any immigrant on arrival if circumstances developed during his passage should demand it, and, instead of one year, the period of probation during which an immigrant might be returned to his own country if afflicted with insanity, unless surely due to causes arising after his arrival, should be extended to two or even three years.

Doubtless such legislation would be bitterly opposed by steamship companies as tending to lessen the number of their steerage passengers, and by irresponsible emigration agents, who send out every soul they can for the sake of the commission received on ocean and railway tickets. But the interests of the State should be paramount to such selfishness, and the Government should insist that Canada, while a hospitable refuge for the deserving poor, be not made an asylum for the diseased and defective.

Our Requirements.

Canadian requirements, speaking generally, are many. The most pressing, to my mind, are separate accommodation for idiots, epileptics, inebriates and the criminal insane; proper means for the segregation of the tubercular; some provision for the temporary relief of friendless convalescents; and the abolition of political patronage in asylum affairs.

In the matter of proper and sufficient accommodation for idiots and imbeciles Canada is woefully behindhand, there being in the whole Dominion not a single institution for these classes conducted on the lines that modern science and experience have found most satisfactory and successful. In all the provinces, with the exception of Ontario, the feeble-minded, which is a generic term now used to include all degrees of idiocy and imbecility, if provided for at all, are housed in poorhouses and other establishments, which provide for sane persons as well, or are mixed up with the insane population of the lunatic asylums. Ontario alone has attempted any adequate provision, and even she, from a spirit of false economy, has allowed a once promising institution to drift backward.

The care, training and education of the mentally defective is an accepted public duty, and should be undertaken by the State at public cost, at least to the extent of providing the necessary institutions and schools for their care and teaching. Mere custodial care, even if provided in separate establishments, does not meet the requirements of the case, it being admitted by all who have made the interests of this class a life study, that any effort made in the direction of bettering their condition is useless unless a training school is combined with the custodial asylum. Surely it is just as essential to educate the imbecile as it is to educate the deaf-mute or the blind. To allow him to grow up without education or "habit-training" is simply to allow him to degenerate into a repulsive, helpless creature, often so brutal in his propensities that, for the protection of the public, he has to be placed in custody. Of the milder types, many of the boys commit crime and find their way to reformatories; the girls fall from the paths of virtue, become mothers, and bring forth children more feeble-minded than the parent. The education, however, as well as the method of imparting it, must be made to suit the incomplete mental organization with which we have to deal. Even the least weak-minded are generally unable to profit, to any extent, by the instruction of ordinary schools, and often they suffer unmerited hardship at the hands of teachers, who, ignorant of the mental defect, attribute backwardness to laziness or perversity. So well is this fact recog-

nized that the public schools of New York, Philadelphia, Boston and Baltimore are organizing special classes for backward and feeble-minded children. Cognizant of the same thing, the Royal Commission on the Care and Control of the Feeble-minded, recently sitting in London, England, expressed the opinion that the provisions of the Defective Children's Act of 1899, by which the school authorities are permitted to compel the parents of feeble-minded children to send them to special certified schools for suitable instruction, should be made compulsory.

The ultimate aim and object in the teaching of the feeble-minded being to fit them, as far as possible, to become useful men and women, it necessarily follows that school teaching should be followed by manual training. Imbecile children, when they have acquired such elementary education as their limited abilities will permit them to assimilate, should be set to learn some useful trade, by the practice of which they may become at least partially self-sustaining. It is in the industrial departments of the large establishments for the training of imbeciles that one sees what the better class of these unfortunates is capable of learning, and what really good workmen many of them become under the supervision of patient and intelligent instructors.

It was the lack of manual training that constituted the great barrier to further progression in the Ontario institution, to which I have alluded as the only one of the kind in the Dominion. As early as 1872, Mr. J. W. Langmuir, then Inspector of Asylums, urged the creation of an asylum for idiots which should consist of two distinct departments, one a training school for young idiots, the other a custodial department for the safe-keeping of adult idiots who were unsafe to be at large. By the adoption of the second portion of Mr. Langmuir's scheme the Ontario Government established the first custodial asylum for idiots on the continent. Later, a teaching department was added, and for several years Dr. Beaton, the Superintendent, was enthusiastic in his praise of the good results obtained. Ere long, however, he discovered that it would be impossible to secure any permanent benefit if manual training was not made to go hand in hand with mental and physical culture. Time and again he appealed to the Government for the provision of industrial instructors, but all in vain. In addition, his staff of teachers was reduced to such an extent that, in 1902, the training school had to be discontinued. In concluding his report for that year, Dr. Beaton says, "It is to be hoped that they (the schools) will soon be reopened with a capable staff of teachers and instructors, and that the institution and schools will not only be placed on the popular footing of years ago, but far in advance." I am sorry to say that this hope has not yet been realized.

With the reports that many imbeciles, after training, are independently capable of earning their own livelihood, I am not prepared to agree. Without continuous supervision little can be expected from them, no matter how highly trained and educated they may be; their whole disposition and temperament, away from control, in the vast majority of instances, completely negatives the supposition. A few improvable cases may be rendered capable of earning a modest competence, but a few, and only a very few, are successful. In nine cases out of ten, when such patients are said to earn their own living, it will be found that they have some advantages in the line of continued supervision. There can be no doubt, therefore, that it is the duty of the State to provide some means of permanent guardianship for these cases if friendless, and the need could be admirably met by the creation, in all institutions for the feeble-minded, of a separate department for improvable cases, who, after having undergone their period of training, could be drafted into work-shops of various kinds, or do farm and garden work under the supervision of an inspector. In this way they could be made in a large measure self-supporting—perhaps even a source of revenue to the State. The model institution outlined by Dr. W. W. Ireland, than whom we have no higher authority, would consist of three separate departments; a custodial department for the extreme and non-educable class; an educational department for those capable of being taught and trained; and a semi-custodial department for those whose education and training has been completed; these three departments to be distinct buildings at a moderate distance apart, but all under the same superintendence.

As respects special accommodation for epileptics, Canada is even worse off than she is in that for the feeble-minded, because, up to this date, no separate provision whatever has been made for them. Like the idiot, they have either been kept at home, confined in poorhouses, or scattered through the various wards of insane asylums. Every principle of justice and humanity is opposed to the indiscriminate mingling of epileptics, lunatics and paupers, and Ontario, to her credit be it said, has already taken steps to right this wrong by founding an epileptic asylum at Woodstock. This, it is expected, will be ready for occupation during the present year, certainly not before it is urgently required, since, by statistics compiled by Dr. Russell, of the Hamilton Asylum, in 1893, there were at that date no less than 292 epileptics among 4,251 asylum residents, with probably more than double that number scattered through the country, a burden to their friends and a menace to the public.

The peculiarities and requirements of epileptics are such as to characterize them as a distinct class, for whose well-being separate accom-

modation is necessary. Only under such circumstances can they receive that special care in the way of occupation, diet and moral treatment that their condition demands; only in that way can we spare our insane patients the annoyance arising from the paroxysms of their disease, their irritability and the violent outbursts of maniacal excitement to which many of them are subject. That the insane epileptic is properly a State charge, every person agrees, but the same cannot be said of those who are sane. Personally, however, I am of the opinion that all epileptics ought to be under proper care and treatment, and to a certain degree under control, and if these requirements cannot be supplied by the friends, then, both for the patient's sake and for that of the community in which he resides, provision should be made for him by the State. The boundary line between sanity and insanity in the case of most epileptics is a very narrow one, and our Provincial Governments would do well to follow the example of the United States, Germany and other countries where timely care of the epileptic often prevents his passing into the category of the insane.

According to the best modern authorities, employment is a *sine qua non* in the treatment of epilepsy. Those in touch with epileptics all maintain that the fits tend to disappear during working hours. Dr. Spratling, of Craig Colony, is strongly of this opinion, and states: "On holidays and on rainy days, when patients were compelled to stay indoors and could not engage in any occupation, the number of seizures was doubled." In this point of view the colony system undoubtedly offers the best mode of care for the victims of the "sacred disease." In colonies a variety of trades can be carried on to advantage, and, if a sufficiency of land be secured, floriculture, fruit-growing, and market-gardening, all of which are among the best forms of occupation for epileptics, both male and female, can be made sources of profit. In this way the colonists are enabled to contribute in some degree towards their own maintenance. Probably the most promising plan to meet all requirements, at least expense, is that advised by the Manchester and Chorlton Joint Asylums Committee, whereby one portion of a large estate is set apart for the accommodation of sane epileptics, another portion for those who are imbecile or insane.

The equity and wisdom of separating the criminal insane from those innocent of wrong-doing cannot be disputed. In Canada, however, we have no provision for such segregation, and the asylum authorities are obliged to receive not only all criminal lunatics, but all insane criminals on the expiration of their penal sentence. The former evil, bad as it is, is dwarfed by the latter, because patients of this type, as a rule, retain

all their criminal instincts, and are among the most vicious and depraved of the human race. The presence of such patients on the wards of an ordinary asylum is a standing menace to the peace and discipline of the whole institution. In their sane moments, they never had the most distant ideas of the rights of property, and seldom placed any value on human life when it stood in the way of the prosecution of their criminal designs; when insane, these traits are intensified, because what little power of self-control they had is generally lost and the fear of punishment for their misdeeds is banished. The more an ordinary lunatic improves, the more easily he is managed, whereas the more rational an insane criminal becomes the more dangerous he is. If taunted by their fellow-patients, as is apt to be the case, such lunatics are prone to violence; in addition, they are constantly making efforts to escape, and safeguards have to be provided against their accomplishing their purpose. In this way the innocent are made to suffer for the guilty, because we cannot fully carry out the modern idea, which discourages the use of bars and locks, in fact, everything that partakes of the nature of a prison. Many of the insane retain all their self-respect, and object to associate with this class of patients, while their friends, quite rightly, feel it a grevious wrong to have their unfortunate relatives housed with men and women who have been deliberately guilty of crime, and who, while undergoing punishment for such crime, have been overtaken by insanity. The Kingston Asylum suffers most from this cause owing to its contiguity to the penitentiary, and its Superintendent, Dr. C. K. Clarke, who has long and strenuously protested against it, forcibly concludes his report for 1903 in these words: "People outside of institutions do not care to associate with instinctive criminals—there is no reason why the non-vicious insane should be forced to accept a companionship that would be repulsive in everyday life."

A resolution offered by Dr. Pliny Earle, and adopted by this Association in 1873, applies forcibly to Canada at the present day. "That when the number of this class in any state (or in any two or more adjoining states that will unite in this project) is sufficient to justify such a course, these cases should be placed in a hospital specially provided for the insane; and that until this can be done, they should be treated in a hospital connected with some prison, and not in the wards or in separate buildings upon any part of the grounds of an ordinary hospital for the insane."

The former is undeniably the better plan, and, if Ontario be taken as as index to the existing state of affairs in the Dominion, there is certainly a large enough proportion of the criminal classes of the insane to

warrant the creation of a special asylum for them. In 1899 there were in asylums of that province no less than 77 criminal lunatics guilty of offences but acquitted by the courts on the ground of insanity; the number of criminal lunatics would probably equal this, and there must be a large number of like cases in the other provinces. For the Federal Government to erect an institution for the reception of these cases, taxing the various provinces in proportion to the patients they send, would seem to me the best and most economical way to meet the requirements. Failing this, all such patients should be kept in the penitentiary asylums, which should be open not only to insane criminals whether their sentences have expired or not, but to the criminal insane as well. Criminality alone should be the criterion for the separation of these people from the ordinary insane.

For some years a conviction has been steadily growing in the minds of physicians and the general public that Canada is behindhand in the provision for the care and control of inebriates belonging to the lower ranks of society. In 1875 the province of Ontario took steps toward providing for these unfortunates but the good intention was abandoned. To my mind there is no doubt that the custodial care and treatment of inebriates is a question of the gravest importance, and that the establishment and maintenance of a hospital for this purpose fall within the true sphere of the Government. The great barrier to the creation of such an institution has been the thread-bare cry, the "liberty of the subject," but the rights of the individual should be subordinate to the rights of society. We are told that the inebriate by his drunkenness violates no law, and this may be so. But are we, therefore, justified in allowing him to continue his debauchery until he commits a crime, as so many of them do, while many more are only by the merest accident kept from so doing? If a lunatic threatens suicide or the life of a fellow-citizen, we put the law in force and confine him, without, as a rule, waiting until he has made an attempt on his own life or committed a homicide. It should be the same with an inebriate.

The distinction between drunkenness and insanity has frequently been the subject of forensic investigation, but it is daily becoming more and more evident to the profession and to some extent to the laity, that inebriety and dipsomania are diseases of the brain, resembling, if not in some cases constituting, true insanity. That an individual should in all other matters appear to be of sound mind, but that at certain times he should be subject to a morbid desire to reduce himself below the level of the beast by means of drink, is hard to grasp, but none the less true. Equally true is it, as shown by recent German studies, that the continuous

use of alcohol to excess produces certain molecular changes in the brain cortex, which are apt to be permanent. The result is a lowering of the moral tone, a dulling of the mental powers, and a weakening of the will which constitute an organized, progressive degeneration. Nor is the ill-effect of the excessive use of alcohol confined to the individual himself. There is strong evidence to show that the children of intemperate parents inherit a marked tendency to intemperance, insanity, idiocy, epilepsy, or some other form of mental disorder. Such eminent authorities as Professor Kraepelin of Heidelburg and Professor Berkley of Johns Hopkins University agree in considering alcohol as a powerful factor in the production of insanity, the latter going so far as to say, in his work on mental diseases, "Of all the varied inciting causes of mental infirmities, heredity and alcohol are most important." Personally I would go still further and say that, in the majority of cases at least, inebriety itself is a mental disease,— a true psychological condition. If as has been done, we define an insane person to be, "One who owing to perverted or deficient mental powers, the result of functional or organic disease of the brain, cannot adapt himself to his natural environment, and whose conduct is not in a sufficient degree guided and restrained by the ordinary safeguards of society," we include a large section of those at present known as habitual drunkards. But whether prepared to go thus far or not, I think there are few who will not agree that alcohol does much more harm in the way of producing mental degradation in the many who are never placed under care, than in the few who now find their way into asylums. Everyone is acquainted with men and women whose mental powers are so shattered by long-continued indulgence in drink that they have reached the border-land between sanity and insanity, even if they have not overstepped it.

To try to reform this class by any other means than personal restraint is "wasting our sweetness on the desert air." They must be placed in custody in an institution, the superintendent of which is clothed with authority to detain his patients for an indefinite length of time. In other words, the same policy in respect to their personal liberty should prevail, as now prevails in respect of lunatics. It matters not what the form of commitment be, provided it is statutory and means a definite and prolonged term of oversight and treatment. This treatment should be conducted in a special establishment where work of various kinds,— one of the best of remedies,—can be enforced after the necessary medical regimen has paved the way for it. In this manner the cost of maintenance would be greatly lessened.

As early as 1833, Dr. Woodward, soon after taking charge of the

Worcester Insane Asylum in Massachusetts, urged that inebriates be regarded as insane and sent to the asylum for special treatment, but this is manifestly wrong. To associate the ordinary lunatic with the inebriate, even if we consider the latter to be truly insane, is an injustice to both. In the words of Dr. Joseph Workman,—"Inebriates are soon dissatisfied, and strongly disposed to magnify the causes of dissatisfaction which the discipline of an insane hospital unavoidably presents,— this dissatisfaction becomes contagious. One inebriate can upset the quiet and comfort of a whole ward."

In view of the declaration of modern science that tuberculosis is a communicable, preventible, and curable disease, the non-provision of proper means for separating the phthisical from the non-phthisical insane might almost be called criminal, and yet in only one of our Canadian institutions, Rockwood, is there any special arrangement for such segregation. In all the other hospitals the medical officers have to combat the plague as best they can by attention to cleanliness, disinfection, and the isolation of the affected as far as possible. So much, however, has been written on the subject of tuberculosis during the past few years that I shall not detain you with any detailed account of my own views on any of the points connected therewith, but content myself by saying that I doubt whether, owing to the rigor of our climate, the "tent treatment," so successfully practised by Dr. A.E. Macdonald at the Manhattan State Hospital East, would be practicable with us during the winter months. Instead, I would favor the erection of a separate, isolated building to be used for tubercular cases only, one portion of the structure being set apart for suspected cases, another for those in whom the presence of the malady in an active state has been positively established. Such a building should be frame and constructed as inexpensively as possible, so that, if its destruction on account of infection seemed advisable the loss would be slight.

An important problem confronts the superintendents of Canadian hospitals, as it does those of the United States, in the case of the discharge of friendless patients. This is the securing of homes and employment for them. Who of us but can call to mind cases where the discharge of patients, though fully warranted by their mental condition, has been delayed for weeks, even for months, because they had no friends who could or would take charge of them on their return to the world, no homes to go to, no employment awaiting them by which they could earn their bread? The average citizen seems to have a morbid dread of the poor unfortunate who has been insane, and utterly refuses to even

think of hiring him, while his wife is equally resolute against engaging as a domestic any woman who has been an asylum inmate. To turn such persons adrift without means or help is virtually offering a premium for their return to the hospital, whereas, if given some slight assistance they might earn a fair living and not again become a charge on the public.

"'Tis not enough to help the fallen up,
But to support him after."

Criminals discharged from prisons and reformatories are helped and encouraged by Prisoners' Aid Societies, often indeed assisted by the State with gifts of clothing and money. Fallen women are taken in hand by societies with a view to their reformation. Orphans are housed, educated and clothed by the charitable. Only for the poor creatures who have emerged from the gloom of dethroned reason is there no helping hand, no assistance of any kind. The best remedy for this pitiful state of affairs is to be found in the organization of "After-Care Associations for the Insane," such as exist in France, which country was the pioneer in this branch of philanthropy, Switzerland, Italy, Germany and Great Britain. These associations would have to be the outcome of private enterprise, because the Governments of the several provinces have already as much as they can do to provide for those actually insane. Doubtless, however, if once started by private benevolence and brought to a successful issue State aid would not be wanting to help the good work along.

Last but certainly not least of the wants to which I would call attention is the abolition of political patronage in the matter of hospital appointments and the administrations of hospital affairs. The "spoils doctrine" which decrees that "office is a reward for political service" has done much to keep down the record of scientific work in Canadian hospitals for the insane. Merit has had little weight, especially in Ontario, as against "political pull," and the consequence is that almost two-thirds of our existing asylums are directed by superintendents destitute of special training prior to their appointment. That men taken from the ranks of the general profession do sometimes prove themselves admirable asylum officials, I do not dispute. But what I do maintain is that the principle is wrong. To subject the care of the insane to political purposes is a flagrant injustice to the patients, who should be afforded the best possible chance for recovery; to the tax-payer, who should receive the best value for the money he pays for their support; and to deserving juniors who are thereby debarred from all chance of

promotion. Superintendents are made, not born, and it requires years of conscientious study to acquire a knowledge of how to deal satisfactorily with the manifold problems of psychiatry. Moreover, assistants generally take their cue from the superintendent, and if the superintendent be not specially trained for his work and take no active interest in it, his subordinates will almost inevitably lapse into routine. Nor can we blame them much that such should be the case. With no example set them, no prospect of advancement to cheer and encourage them to put forth their best efforts, what else could we expect?

Were the "spoils system" confined to the appointment of the heads of asylums the resulting ills would be lessened. Unfortunately it is not. Every medical office connected with our asylums from the highest to the lowest, is regarded as "political pap" to be administered where it will do most good for the dominant party. Governments are unable or unwilling to grasp the fact that the scientific study of psychiatry consists primarily in the study of mental phenomena, and that this can only be done to advantage by men specially trained for such study. As a result, well developed seniors, who have been failures in life, are often given the junior places that should be awarded only to young men who have shown interest in, and capacity for original research. This is manifestly unfair both to the inmates of our asylums and the superintendents thereof. "Responsibility and authority must go hand in hand" is a time-honored axiom, but the system of governmental appointment of assistants furnishes the anomaly of superintendents held responsible for the successful management of their hospitals, and yet deprived of the authority to appoint the officers upon whom such success in great measure depends. Surely a superintendent should be best capable of judging of the fitness and competency of his assistants, and it comports with common sense that he will, if only through self-interest, endeavor to procure the best he can find.

A vigorous editorial, "Insanity and Politics," recently published in the "Montreal Medical Journal" deals so appropriately with the ills of political patronage in our asylum service that I may be pardoned if I quote a portion of it. "Most persons will admit unless they are incapacitated by congenital perversion, or political prejudice, that a hospital for the insane exists—pun or no pun—for the purpose of extending hospitality to the insane, and not to the protegees of a political party. In short, it is mental not political degeneracy which entitles an entrance to the enjoyment of such hospitality as it can offer. In Canada, there are to-day eighteen hospitals for the insane, and all but six exist for the

combined care of the insane and the politicians. In twelve the present superintendents owe their appointment to influences other than their attainments in psychiatry.

"The answer which the politicians make to all protests is that the men who occupy the posts of assistants are not sufficiently qualified to become superintendents. This is partly true, and because it is partly true the case is the worse; because, if there are incompetent men among the assistants it was the politicians who put them there. But the answer is inadequate; because, in spite of the politicians there are enough good men in the service to fill every vacancy which may occur during this generation. The wonder is that there are any remaining, when they have seen themselves passed over time and again by men whose attainments were unproven. The rewards of the specialty of psychiatry are small enough, and should not be filched away. The injustice is not chiefly to the men who spend a life-time in acquiring a knowledge of the insane, of their diseases and of their treatment; it is to the wretched insane themselves who are deprived of that experience which might aid in their recovery.

"We yield to none in our admiration of the general practitioner. We are aware of his energy, his resource and his fidelity, but not even the general practitioner will lay claim to a capacity for treating off-hand and to the best advantage grave lesions of the eye and ear, or of the more secret parts of the body. He should adopt the same attitude toward the brain. In time it will come to be a shameful thing for a general practitioner to accept a position for which he is not qualified, since thereby he is committing a wrong towards his colleagues and towards his patients.

"The ideal service is that which prevails in New York. The superintendent is appointed by the board of Management, and he must be selected from men who have served at least five years in an institution for the insane, and have proved their capacity and instinct for such work. The assistants in turn are appointed by the superintendent and they obtain advancement according to their merits, no step in advance being made unless the candidate has had previous experience in the specialty, and proved his fitness by passing an examination before promotion."

Nor is it solely in the way of appointments and promotion that our provincial governments have shown themselves remiss. The good men in the asylum service, and good men there be, are, in most instances, hampered by the want of proper equipment and the paucity of the medical staff employed. It is the duty of the State to aid in every way the

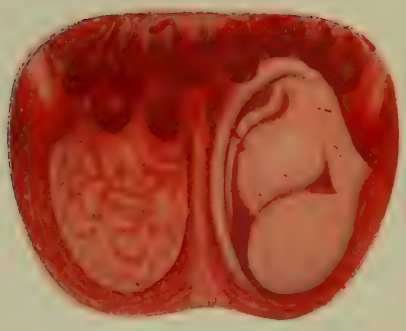
attempts of its physicians to do scientific work. Only so can they be stimulated to keep pace with the trend of modern research in other countries,—only so can we guarantee that our patients will be under the care of ever-widening experience. Hitherto the governmental policy has been to provide little or no equipment for study, and so to limit the number of physicians that the greater part of their time is taken up with clerical duties. The numbing effect of such routine work is great, and might well make the average assistant adopt the words of Mr. Mantalini and pronounce life "one demd horrid grind."

Before we can properly enter on the study of psychiatry, as we ought to do, our Governments must learn that to make a hospital a centre of scientific research its physicians should be appointed from the best class of men; should be paid sufficiently well to free them from anxiety as to their future livelihood; should be certain of promotion if they prove themselves fitted therefor; should be assured of a retiring allowance, graduated on length of service, as is the case in England and other trans-atlantic countries; should be freed from an overburden of routine work; and should be provided with books, apparatus and assistance to properly pursue their researches.

Much more might be said on this and other subjects relating to the care of the insane in Canada, for example, the necessity of separate hospitals for acute cases and of pavilions connected with general hospitals, of nurses' homes, and of retiring allowances for medical and other officers, but I fear you will already have applied to me the old Spanish saying anent a tedious writer,—"He leaves no ink in his inkpot." I shall, therefore, no longer trespass on your forbearance, but content myself by saying in conclusion, that while with respect to custodial care and ordinary treatment, moral and medical, Canada, generally speaking, is well up to the times, she is doing little toward the solution of the many problems connected with the scientific aspects of insanity. In this respect she presents but a sorry picture when compared with the good work being done in many hospitals elsewhere. To stand still is to fall behind. The universal motto should be,—

"Press on.—'for in the grave there is no work
And no device.'—Press on while yet ye may."

The first session of the Conference of American Anatomists was held in the Wistar Institute, Philadelphia, on April 11th. Among those present were representatives of anatomical science from every state in the Union. The meeting had under consideration the question of the advisability of selecting a central institute for co-operative research.



BONY OCCLUSION OF RIGHT POSTERIOR NARIS. (CONGENITAL.)

FEMALE : AGE, 8 YEARS.

BONY OCCLUSION OF RIGHT POSTERIOR NARIS. (CONGENITAL.)

FEMALE : AGE, 22 YEARS.

[*Phillimore, 1905.*]

REPORT OF TWO CASES OF BONY OCCLUSION OF THE RIGHT POSTERIOR NARIS.

BY

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The comparative rare occurence of occlusion of one posterior naris due to a congenital bony partition is my excuse to place two such cases on record. As the history of the two cases is practically similar, a single and brief outline will therefore suffice for both. The first concerns a young woman 23 years of age, and the second one, for which I am indebted to the kindness of Dr. E. D. Aylen, occurred in a little girl nine years of age. The first symptom noted by the parents was of impaired nasal respiration, especially during nursing. The entrance to the right nostril was observed to be filled with a considerable amount of mucous secretion, and it was thought that the children were suffering from so-called "catarrh." This condition of affairs has continued ever since, and at the present time the following are the results of the examination: —

The right nostril in each case is filled with a large quantity of thick tenacious mucus, which is only removed after careful syringing and swabbing. Upon anterior rhinoscopic examination the nasal cavity is seen to be very spacious, due largely to an ill-developed condition of the inferior and middle turbinated bones. By means of the probe the posterior naris is felt to be closed completely by a partition, which conveys to one the sensation of its being bony.

Posterior rhinoscopic examination confirms the existence of the foregoing condition, and it is well depicted in the accompanying sketches for which I am indebted to Dr. R. H. Phillimore. There is an appreciable diminution of the sense of olfaction and hearing on the corresponding occluded side: (1) Right ear, 20/40: (2) Left ear 30/40. The mucous membrane covering the middle and inferior turbinated bodies is paler than normal, and sensation is not impaired. The treatment carried out was the same in both cases.

Under ether anæsthesia, the bony partitition was perforated by means of an electric dental drill, the movements of which were guided by the finger introduced into the naso-pharynx. The opening thus made was kept patent by a strip of iodoform gauze introduced through it into the naso-pharynx. The subsequent progress of each case was satisfactory and uneventful, and respiration has been established through the once occluded nostril .

Read before the Montreal Medico-Chirurgical Society.

Occlusion of either one or both posterior nares may be due to either a membranous or bony partition. The former is fairly common; the latter, of which the two recited cases are examples, is comparatively rare. The condition is always congenital, and its mode of origin is still a doubtful question. Luschka believes that the bony plate is a continuation of the free border of the horizontal plate of the palate bone: Kundrat and Shrœtter that it is an extension of the vertical portion. Hansemann in an able article in Heymann's work claims that no satisfactory explanation of this peculiar development has been adduced.

CARCINOMA OF THE TONGUE.

BY

G. E. ARMSTRONG, M.D.

Gentlemen:—Having in the wards at present a series of cases of carcinoma of the tongue, that is fairly representative of the progress and varieties of this dread disease, I shall take the opportunity of discussing with you some of the more important, perchance elementary, points relating to its recognition and treatment. A casual observation of these cases should indelibly fix upon your minds a vivid picture of its natural history.

This man, whom many of you saw before operation, came to us with a small, quite insignificant-looking ulcer on the border of his tongue. There were a few enlarged but soft lymphatic glands to be felt in the neck. A little soreness when eating was really the only inconvenience felt.

The second patient has a large fungating ulcer on the side of his tongue. The disease is well advanced; the glands in the neck are enlarged and hard; he suffers a good deal of pain. He suffers when he talks, and can with difficulty be understood. He cannot perfectly masticate his food, and swallowing is distressing. His mouth is constantly filling with saliva, which you see him as constantly wiping away.

The third case is still further advanced. The tongue is fixed, articulation difficult. No solid food can be taken. He cannot open his mouth. You observe this large, foul, sloughing crateriform ulcerated mass beneath the jaw. The glands are enlarged down to the clavicle. The lower jaw is involved. The secretions from the neck and jaw are extremely offensive to the patient and to others. He is in constant pain, and requires frequently repeated doses of morphia. He is septic, has a rapid pulse, and altogether is about as miserable as a man can be.

Clinical Lecture delivered in the Montreal General Hospital.

These three cases should teach you that the disease, limited at first to a very small area, tends to involve the tongue extensively, to extend beyond the tongue and mouth. invading the jaw, the tissues of the neck and the lymphatic glands, slowly but surely limiting the power of speech, the power to take food, causing great pain and suffering and ultimately destroying life.

Our interest in all forms of malignant disease is stimulated by the apparent increasing frequency of its occurrence. A few figures from Bergmann's System of Surgery are instructive. In the first place, there is the difference in the sexes. Of 1,000 women suffering from cancer, 243 had the condition in the mammary glands and 13 in the mouth, eight on the lips, three on the tongue and two in other parts of the mouth. In 1,000 men suffering from cancer, 111 tumours were in the oral cavity, of which 77 were on the lips, 21 on the tongue, and 13 in other parts of the oral mucosa; so that carcinoma of the mouth is much more common in men than in women—83 per cent. in men and 16 per cent. in women.

Barker, who has been working up the frequency of carcinoma of the tongue, gives statistics which show that in England during the years 1872-81, the number of cases increased from 26 to 115 per thousand. That in itself is enough to arouse one's interest to an extraordinary degree. Of course, it may be argued that records are much more accurate now than they were 25 years ago, that diagnosis is more correct, that autopsies are more frequently performed, and people come with increasing frequency to centres of medical and surgical work where accurate statistics are kept. However, reasons of that kind do not explain it all, and it would certainly seem that we are face to face with the fact that carcinoma is increasing, not only in the tongue but in other parts of the body.

I suppose the causes of lingual epithelioma are similar, probably identical, to those of carcinoma in other parts. We don't yet know the cause of cancer. We do know that cancer at the start is a local disease. I think many clinical surgeons feel very strongly that there are, in many instances, pre-cancerous conditions—I mean local conditions which predispose to cancer. Among these may be mentioned injuries, irritation from carious or jagged teeth, smokers' patches, gummata, syphilitic ulcers. These act by producing irritation, and by altering the nutrition and the resisting power of the tissue, as, for instance, the cicatricial contraction following an injury or a healed ulcer. It is doubtful if the ulcer from syphilis is more liable to malignant change than that

from any other cause. In one instance I removed a small ulcerated area from the palate, which was obviously due to the pressure of a false-teeth plate. Microscopically, it was shown to be a typical squamous-celled epithelioma. It would be well for family physicians to take sufficient general interest in their patients to instruct them regarding the danger of all sores of the buccal mucosa changing their character, and to advise them to go to the dentist when necessary or to stop smoking if need be.

How are we to recognize an epithelioma of the tongue in the earlier stage? This first case is an example of early diagnosis, the result of a high-class of medical work on the part of the general practitioner, and I have no doubt this case will prove the good results which are to be obtained when an early diagnosis is made, when a patient accepts the advice given to him as a result of that early diagnosis, and the surgeon does his work properly.

This patient, 53 years of age, consulted Dr. Gordon, a short time ago, for a pain in the gums (December 3rd). Now, this is a very indefinite symptom, and it would have been very easy to have looked into the mouth, and not seeing anything very much wrong, to have prescribed something for the stomach, or to have given a mouth wash; but it must be noticed that Dr. Gordon's good work was in discovering that the pain did not really start from the gums, but was from another source. Under a good light he examined carefully, looked at the side of the tongue, and there discovered a slight fissure on the right side of the tongue, far back opposite the second lower molar tooth near the lingual nerve, and very tender. There was scarcely any induration, but there was considerable tenderness. The patient was asked to return, which he did a few weeks later, and it was then found that in place of this fissure there was a small ulcer, very like an aphthous ulcer, perhaps one-sixteenth of an inch in diameter. Here again is where the general practitioner can do good or bad work. To do good he should make every effort to establish a correct diagnosis; to do bad work, he should make light of the sore, or worse, apply a caustic. The patient was referred to this clinic.

Here it was found, first, that the ulcer was painful; second, it was indurated, hardened and thickened, and third, that there was an enlarged gland or two under the jaw on that side. Now came the important question as to its nature. It was examined very carefully; it was not a decubitus ulcer; the man was not tubercular, and there was no history of lues; it was clearly not an actinomycotic condition, and so by exclu-

sion we were brought down to the probability that it was the beginning of an epithelioma. A portion was removed, after injection with cocaine; and the typical cell nesting and the dipping down of the epithelium was discovered by the pathologists, and the clinical diagnosis confirmed. The indications were clearly to remove it. This was done, and the specimen was proven by the pathologists to be carcinomatous. The future prospect for this man is now good; but had the examining physician merely applied a little caustic at the time, and on the return of the patient a little more, perhaps given the man a stick to apply at home, the condition after a few months of this treatment would have been one of inoperable carcinoma.

Butlin speaks of a man who developed a warty growth on the side of the tongue; he went to the family physician, who said it was nothing but a warty growth, and of no consequence; a little later he spoke to a medical friend of his, who gave the same opinion, telling him to think nothing of it; still later, he turned up at Mr. Butlin's clinic with an almost inoperable condition; the patient was himself a doctor.

Now, in the case of this man, 53 years of age, I think we can give him every encouragement to believe that he will not be troubled with this condition again, as it was thoroughly removed, and, as I say, taken in time. Had it been otherwise, the picture and prospects would have been entirely different. This patient is under the disadvantage of suffering from a serious cardiac condition; but he is improving, his nutrition is better, and he is making a very nice recovery. This is an illustration of the early case, and all should be like that.

The next in degree of severity is that of this young man, 37 years of age, who came to the Hospital December 27th, complaining of a very sore mouth. He was born in England, has been in South Africa, and has only recently come to this country. About three months ago, he first began to suffer from a sore mouth. He now has this very extensive disease of the tongue, which began on the left border opposite the first molar tooth, and has extended almost half-way across the tongue. The glands under the jaw on the left side are enlarged. On the right side they are also enlarged and palpable. In this case the condition is operable. By means of an extensive excision, and the sacrifice of the greater part of the tongue, as one cannot be sure that it has not gone right through, and also the dissection of the glands, the disease may be eradicated.

This next case is a man 54 years of age, who shows a very extensive growth, which has been going on about a year, and illustrates the life

history of cancer of the tongue, and it, of course, is now inoperable. He has never had any operation done, though the diagnosis was made early. He always declined any interference, with the result which you now see. The disease, beginning in the floor of the mouth, has extended down to the submaxillary region, has destroyed the submaxillary gland and the overlying skin, leaving this deep chasm with sloughing borders, and has extended to the lower jaw. Here we have carcinoma of the floor of the mouth and tongue, carcinoma of the glands in the submaxillary region, and of those behind the angle of the jaw, beneath the chin, and on the other side of the neck, the lower jaw itself, and it is now extending down towards the supraclavicular region. The glands just opposite the bifurcation of the carotid are not palpable, and this is always one of the regions to be examined, as it is often spoken of as one of the glands involved in this condition. The facial nerve is partly paralysed by pressure or infiltration. The left pupil is smaller than the right, indicating pressure on the cervical sympathetic. I think we all will admit that he cannot speak as distinctly as this fourth patient from whom I removed the whole tongue some years ago.

Here, then, we have practically the inoperable condition; the disease has become too extensive, and the danger would be too great to justify operating. It would mean resection of the whole tongue; resection of the floor of the mouth; removal probably of the lower jaw, with dissection of the neck; and one might be prepared to tie the large vessels, as their sheaths are probably involved.

In these four patients we have examples of four varieties of the beginning of carcinoma. In No. 1 it began as a small fissure on the border. More frequently it begins as a warty outgrowth. Sometimes in an excoriation or leucomatous patch. In No. 2, the beginning was in a rare form. The patient tells us that there was first a lump or nodule on the left side of the tongue opposite to the first molar tooth; that this broke down, and became a running sore. The microscopical examination of a piece removed for the purpose has determined its undoubted malignancy. There is not a clear history of lues, but it is quite possible that the epithelioma has developed in the base of a broken-down gumma. In the third and fourth cases the disease began in the floor of the mouth, possibly in submucous glands, and extended into the substance of the tongue, and downwards, infiltrating the tissues in the floor of the mouth.

In each case the disease began in front of the papillæ. The anterior half and borders of the tongue are more frequently the seat of the dis-

case than the posterior half, or body. The involvement of the surface in old cases of chronic glossitis occurs but rarely. The four patients are males. The greater frequency of carcinoma of the tongue in males is thought to be due to their habits of smoking and drinking. One is 37 years of age and the others 45, 55 and 65 respectively. Cancer of the tongue is commonly found between the ages of 40 and 60. Mr. Butlin has reported a case in a man 24 years old, and Variat an epithelioma of the tongue in a boy aged eleven. These are exceptions, however, and the disease does not frequently occur under the age of forty.

In making a diagnosis of epithelioma of the tongue, one must think of simple ulcer, decubitus ulcer, syphilis, tuberculosis, and actinomycosis. As a rule, it is not difficult to exclude non-malignant conditions; sometimes, however, it is difficult even for the most experienced clinician.

Simple and decubitus ulcers and simple warty growths, in my experience, are rare. The few that I have seen have been clearly due to local irritation from a sharp corner of the tooth or other obvious cause, and have healed within a few days after the irritation was removed. A primary sore on the tongue is rare; generally it is found upon younger patients, and usually about the tip. Then, again, the glands are enlarged almost at once. In cancer the glands are enlarged later on. Secondary symptoms appearing would clear up any doubt. A tertiary ulcer or a gumma may present greater difficulty. Yet, notice that, in the patients before you, the disease began in the border of the tongue. I have already mentioned that malignant disease may start in a fissure on the dorsum of a chronically inflamed tongue. Here the evidence of the old inflammatory condition and the fissure is generally quite apparent. As a rule, however, to which there are but few exceptions, cancer begins on the border, and a gumma is found in the substance on the dorsum. It is covered with epithelium. Later on, after the gumma has broken down, if malignant disease develop, that part becomes hard, probably harder than other parts of the sore. Tubercular ulcer is not common. The presence of pulmonary phthisis might suggest it. Primary tuberculosis of the tongue is exceedingly rare.

In all these conditions, and in actinomycosis, the microscope should be used to confirm or alter the clinical diagnosis. The two should agree. No matter how clear the clinical evidence might be, I should not feel justified in advising a man or a woman to sacrifice a portion or the whole of their tongue unless the microscope confirmed my diagnosis. It is a most serious operation, and I do not think any one of you should undertake to advise such a mutilating operation unless the diagnosis is absolu-

tely certain and confirmed by the microscopical examinations of a portion which had been snipped off. Such a piece can be easily removed under the local influence of cocaine. It is not, as a rule, wise to spend too much time in differentiating these conditions. The disease is steadily progressive, and the patient gets steadily worse. This series of cases demonstrates clearly the natural course of the disease, and its tendency to destroy life. The prognosis in all cases of epithelioma of the tongue is death in 12 to 14 months after the onset. Get all the facts together quickly, and submit them to the test of malignancy. Once the diagnosis of malignancy is clear, lose no time in removing it if it is removable.

As to the nature of carcinoma, I cannot do better than to quote to you the words of Professor Orth: "The characteristic and distinguishing features of cancer cells are that they are none other than epithelial cells. They are epithelial cells, not only in accordance with their structure, with respect to the nature of their protoplasm and nuclei, not only epithelium in accordance with their biological activities, but they are also epithelium in accordance with their origin. A connective tissue cell can never be transformed into an epithelial cell, nor *vice versa*."

But why do epithelial cells take on this peculiar growth? It is important to remember that when an epithelioma develops in the tongue, extends to the glands or to other distant parts of the body, a portion of that cancer is detached and carried to these distant parts. It may be that there is a parasitic cause of cancer, but no one has as yet proved it. To prove this you must find a germ which in pure culture injected into a part will produce an epithelioma. If you transplant a piece of cancer, that does not prove it to be parasitic. One can obtain, with a pure culture of the tubercle bacillus, tuberculosis; but we have no germ which we can inject in like manner to produce epithelioma. When the epithelioma spreads from the side of that tongue, some portion of it, which was a cancer cell, was broken off and carried to that gland, and there it multiplied, for the cancer cells are identical in the two situations.

The practical point of this is that, in dealing with it, all glands communicating with the disease should be removed. One cannot altogether trust to the histologist's or pathologist's report as to its malignancy, because that gland may only that morning have received its first cancer cell, and unless every cell in the gland is examined, the cancer cell may be missed. So that we, as surgeons in dealing with these cases and operating upon them, must assume, if the glands are at all enlarged, that they may be malignant, and should be removed with the same

thoroughness as if we were dealing with a glandular carcinoma of the breast. He would be a bold surgeon indeed, and one over-confident in his powers of discrimination, if he assumed to decide at the operating table, that this gland was simply inflammatory, and he would recover perfectly, once the source of infection was removed, and that the other gland was malignant.

When operating upon patient No. 1, I gave a brief report of the details of some of the operations designed for the removal of epithelioma. To-day we may in a more general way consider some of the essentials of all operations. It must be clear to you that the first and most important essential is early and correct diagnosis. Don't be content to sit on your chair and ask questions, and recommend a mouth wash. Get up, and thoroughly examine in a good light until you find the spot complained of. The next essential is that the whole of the disease should be eradicated. A very wise man and acute observer, who lived about 500 years B.C., said: "It is better not to apply any treatment in cases of occult cancer; for, if treated, the patients die quickly; but if not treated they hold out for a long time." All the ancient commentators explain that by "occult" may be meant either "not ulcerated" or "deep seated." Whatever you do, or do not do, don't apply caustics. They cannot possibly do any good. They do, however, irritate and accelerate the growth, and more than that, they make the patient think that something is being done, and therefore he loses valuable time. It goes without saying that the diseased area should be removed *in toto*. Who can at the operating table define accurately the limits of the diseased area? One may say that the knife should pass at least one centimeter, or half an inch, wide of all evidences of infiltration. Our question, however, cannot be answered quite so easily. Let me put it in another form: Should the whole tongue be removed in all cases? Replying categorically, I should say, No. If, for instance, a small epithelioma is found upon the tip of the tongue, I believe that if in the removal of that growth the knife passes at all points a full inch away from the disease, the results will be as satisfactory and as permanent as would be the case if a still wider area were taken. In patient No. 1, whom I show you, I did not remove the whole tongue. It was a very small epitheliomatous ulcer; the base was indurated, but the immediately surrounding tissue gave no evidence of involvement. I therefore removed the epithelioma and an inch of healthy tissue on all sides. I believe the man is as safe as he would have been had I removed the half or the whole of the organ. I make this statement on the authority

of a paper by Mr. Butlin, which appeared in the *British Medical Journal* five or six years ago.

Recurrence after removal of the whole tongue is nearly always on the same side of the stump or about the tonsil, or in the lymphatic glands of that side of the neck. If the disease is confined to the border of the tongue, one can get as far behind the growth in removing the half as in removing the whole organ. The same reasoning applies to the removal of the tip of the tongue. The advantages of partial removal in suitable cases are, in the first place, a lower death rate after operation, and in the second place, the greatly increased comfort of the patient in eating and speaking. The remaining half does not curl up and become dry and useless. Quite the contrary, it comes to lie about in the middle of the mouth, so much so, that many of you might look in without noticing that the one half had been removed. It is more fixed than the natural tongue, but it is moist, helps greatly in talking, and is most useful in keeping the bolus of food between the teeth in eating. Of course partial removal is only suitable for early and circumscribed cases. The object of the operation is to save life from a disease that is always fatal, if it be left alone. The surgeon, then, can only consider a partial excision in cases where the disease is recognized early, and is limited in extent. The saving of life must ever be the great and all important consideration.

Another essential is the systematic and thorough removal of all the lymphatic glands which may have received infection from the neighbourhood of the disease. The paramount importance of this detail is only being appreciated during the last few years. There may be so-called metastases to the lungs, or liver; and for this the operator may not be responsible. The surgeon should, however, hold himself responsible for as complete removal of the glands of the neck as is possible. The word "recurrence" I consider to be unfortunate. It certainly covers a multitude of sins. Continuance is the word that the operator should ever have in his mind when operating for malignant disease here and elsewhere. With that thought uppermost he will do better work. The prolongation of life after these operations depends largely on the removal of the lymphatics. We are indebted to Sappey for our intimate knowledge of them. The spread of the cancer cells is through these lymphatics. While it is proved and demonstrated that the lymphatics of the two sides of the tongue communicate freely with each other, it is also a fact that clinically those of the opposite side are only affected comparatively late in the course of the disease.

When a patient comes to operation he naturally asks what is to be gained by it. The results of operations for carcinoma up to the present may be variously stated. In one article, written by Butlin some time ago, the percentage of those remaining well, three years after operation, without any recurrence of the disease, was twenty. At the time he gave his last clinical lecture, he had been going over the statistics again and got the percentage up to 26 per cent., or 27 per cent., remaining well after three years, or dying during that interval of some other disease and without recurrence. This is a very small percentage of recovery, and one might question, is it worth while to undergo the serious operation, the danger, the inconvenience? The group of cases which we have here before us is the best answer. No. 1 is recovering with only slight inconvenience; he can eat solid food, and speak distinctly; No. 2, is much more serious, but if all goes well he will make a recovery, though it will be but a poor one; already he is running down hill, has more or less pain, more or less difficulty in talking and eating, and his duration of life if unoperated upon is short. No. 3. is a case in which a year ago something might have done, and you see now the natural course of the disease when left to itself.

The next question that comes up is: Cannot the results be much improved? I am perfectly sure that this is possible, and I wish to impress this upon your minds,—the thorough investigation of all conditions which occur in the mouth. Do not pass them over. With our present knowledge that cancer is primarily a local disease; with our increasing experience with pre-cancerous conditions; with the clinical demonstrations before us of its spread through the lymphatics, I do not see why we cannot obtain 75 per cent of cures instead of 75 per cent of failures. The success of the surgeon is largely dependent upon the acuteness of the general practitioner. Nearly all patients consult the family physician in the first instance.

I think it would be well if the profession took a more hopeful view of epithelioma of the tongue. Results are bad, because the disease is in too many cases not recognized sufficiently early; because operative procedures in the past have not always fulfilled all the indicationes taught by the pathologists and morbid anatomists of to-day, and because physicians have not been keen to insist upon all their patients who had warts, fissures, ulcers on the margins of their tongues, getting an early diagnosis, and when malignant early removal. Although statistics show a large percentage of recurrences there are happily

conspicuous exceptions. Guinard reports a case where Verneuil removed the left half of the tongue in 1885, by an extensive operation involving the soft parts of the sublingual and submaxillary regions. This man remained in a state of perfect health both with regard to this general condition and the state of his mouth for 18 years, when he suffered from a recurrence in the right half. Protherat reported a case in which a woman had remained quite free from recurrence of cancer of the tongue during twelve years after removal of the left half of the organ. Roulier also mentioned another case of lingual cancer in which there had been no recurrence after operation during an interval of nine years.

I also show here a man on whom I operated seven years ago, on the 28th. of this month. I removed the whole tongue, the floor of the mouth, and the glands on both sides with very thorough dissection down below the bifurcation of the carotid. He is still in perfect health; he looks well, and is in business as a book agent. The floor of the mouth has so come up as to enable him to eat, and he can articulate much more distinctly than cases,II. and III. with the tongue bound down with cancer.

These cases show that, after removal of cancer of the tongue, speedy recurrence is not always inevitable, and that the surgeon in dealing with the disease is justified in practising extensive operations.

We have every reason to believe that the meeting of the Canadian Medical Association, to be held in Halifax next August, will be very largely attended. Leading members of the profession in Quebec, Montreal and Toronto have signified their intention to be present, and we have good reason to expect a number from Winnipeg, the prairie country, and British Columbia. Throughout the Far West there are settled many practitioners who have gone from the maritime provinces, and who will, no doubt, make an effort to revisit their old homes and renew old acquaintanceships. The arrangements for the meetings of the Association, and for the entertainment of the guests have been very favourably received. The final announcement of railway rates cannot be made for some weeks, but we expect to secure the friendly co-operation of all transportation companies. It remains to secure the hearty and substantial assistance of each individual member of the Medical Society of Nova Scotia, which has assumed the honour of entertaining the visiting members of the Association.—*Maritime Medical News.*

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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Remittances, advertisements or business communications are to be addressed to the Montreal Medical Journal Co., Box 273; all others to the Managing Editor, 216 Peel Street, Montreal. All communications intended for insertion in this Journal are received with the understanding that they are contributed exclusively to this Journal. A limited number of reprints of articles will be furnished to authors at cost price, if a request to that effect accompany the manuscript.

VOL. XXXIV. JUNE, 1905. No. 6.

THE INSANE IN CANADA.

No apology is necessary for devoting so much space to the address which was delivered by Dr. Burgess, President of the American Medico-Psychological Association, at the last meeting, which was held in San Antonio. It contains an account of the treatment of the Insane in Canada from the earliest times to the present day. That in itself is a valuable record; but most, the address is of value because it contains a fearless arraignment of political interference in matters of purely medical interest, and gives a statesman-like view of all those problems which are bound up with the question of insanity.

In respect of length of service, Dr. Burgess is the oldest medical officer in Canada, and he has not been unobservant these thirty years. What he has seen he has written down, and he sends it to the seven Provinces. He has something against each. To Ontario he says: Merit has little weight against political pull; two-thirds of the asylums are

directed by superintendents destitute of special training prior to their appointment. To New Brunswick he says: To carry out such legislation as is contemplated will be to sully the record of a province which has hitherto steadfastly declared against the incarceration of lunatics in prisons or poorhouses. In Prince Edward Island, idiots and imbeciles are sheltered in the poorhouse; British Columbia has no provision for them; Manitoba is still hampered by the constant and pressing necessity of providing sufficient room, owing to the mass of immigrants that has been flowing in during the last two or three years.

Dealing with the increase of insanity in Canada, Dr. Burgess shows that, while in 1891 there were 13,342 insane persons in a population of 4,719,893, in 1901 there were 16,662 in a population of 5,318,606, being an increase, in ten years, of nearly twenty-five per cent. in the number of lunatics, whereas the increase in the total population was less than thirteen per cent. This increase he attributes to the transportation to Canada of the refuse of foreign populations, and he cites documents to prove the statement. By the census of 1901, the population of Canada was 5,371,315, the number of foreign-born being 699,500; the total of the insane was 16,622, and of these 2,878 were foreigners. From these returns it will be seen that a little over thirteen per cent. of the general population—that is to say, the imported element—furnished over seventeen per cent. of so-called Canadian lunacy. Stated in another form, if the native Canadians alone are considered, there is one insane person in every 339 of the population; while the proportion among the foreign element alone is one in every 243. If further evidence were needed, during the year 1903 there were admitted to Canadian asylums 2,213 insane persons. Of this number 1,726 were born in Canada. The remaining portion, 487, representing 22 per cent. of the admissions, was foreign born. At Verdun 2,048 patients have been received since the opening of the establishment, and of this number forty per cent. were of foreign birth. In the same institution there are at the present time no less than thirty persons, in a population of four hundred and sixty, who, if subjected to anything but the most cursory examination, would never have been allowed to set foot in the country.

Evidence is accumulating on all sides as to the undesirable nature of much of the immigration which is arriving. Within twenty-four hours in the first week of last month 3,977 passengers landed at Quebec, and 331 were detained for various causes by the examining physicians.

Dr. Burgess's address does not afford pleasant reading to Canadians, but he has done the country an inestimable service in revealing our defects to ourselves and to the rest of the world.

THE EARLY DIAGNOSIS OF CANCER.

Students of medicine and practitioners at large cannot hear too much upon the subject of Cancer, since much of the tragedy in professional life is bound up with the dreadful disorder. Within recent years there has been so much discussion upon the deeper parts of the subject, that the more obvious aspect has been neglected. The surgeons have been speculating upon the infectivity of the disease, and the influence of heredity. The pathologists have been searching for a specific parasite, one set affirming and another denying that it has been discovered. The therapeutists have been busy with an estimate of the influence of certain rays of light upon its growth; and we have heard too little upon the necessity of an early and exact diagnosis.

Dr. Armstrong has done well in recalling the mind to a consideration of the essential fact that cancer has a beginning; that it is primarily a local disease; that in many instances there is a pre-cancerous state; that it may be detected and that it may be removed. This is the message of his clinical lecture in the Montreal General Hospital, which is printed in this issue of the Journal for purposes of wider circulation. The lecture will recall the old days in that institution, when its great clinical teachers, Osler, Howard, Ross, Macdonnell, used to seize upon one theme, and, stripping it of all accessories, would present it in the simplicity of its truth. The lecturer made it clear that success in dealing with cancer rests primarily with the general practitioners. It is they who are first consulted about the trivial ulcer upon the tongue, about the hardly palpable "lump in the breast." Upon the early recognition of the nature of the condition depends its successful removal. The best which the records show is twenty-five per cent. of recoveries and seventy-five per cent. of failures. Dr. Armstrong's declaration that these figures might be reversed is none too optimistic, if physicians are alive to their responsibility.

The series of cases which was presented showed so perfectly the results of early, delayed and late diagnosis, that a profound impression must have been made upon the student mind. The early case proved that recognition is not difficult, if only care and industry be employed by the physician who is first consulted. The general practitioner cannot hold himself guiltless if he allows a commencing cancer to become inoperable.

In the issue of this JOURNAL for May we had occasion to mention the retirement of Dr. F. W. Campbell from Bishop's College, to give some account of his public service and an estimate of his character. At the same time we were obliged to chronicle the death of his only surviving son, his eldest son having died not a year previously. To-day we desire

to supplement that account by the statement that Dr. Campbell died on the 3rd of May.

We record with much regret the death of Dr. Wainwright, which occurred in London on the 25th of April. Dr. Wainwright was a son of Mr. William Wainwright and a recent graduate of McGill. Death resulted from an attack of appendicitis and tuberculosis.

For the rather full account of the proceedings at the farewell dinner which was given to Dr. Osler we are indebted for the most part to the *Medical News*, of May 6th, 1905.

AVE ATQUE VALE.

The departure of Dr. Osler from these shores to assume the position of Regius Professor of Medicine at Oxford was marked by a banquet in New York on the 2nd of May. The dinner was held at the Waldorf-Astoria Hotel, and it was attended by more than five hundred of his *confrères.*

Those who sat upon the right hand and upon the left of Dr. Osler were: Dr. James Tyson, of Philadelphia, Chairman; Dr. S. Weir Mitchell, of Philadelphia; Dr. W. W. Keen, of Philadelphia; Dr. F. Sandwith, of Cairo, Egypt; Dr. James R. Chadwick, of Boston; Dr. John S. Billings, of New York; Dr. F. J. Shepherd, of Montreal; Dr. A. Jacobi, of New York; Dr. John H. Musser, of Philadelphia; Dr. Edward L. Trudeau, of Saranac; Dr. Frederick C. Shattuck, of Baltimore; Dr. Stephen Smith, of New York; Dr. Frank Billings, of Chicago; Dr. W. H. Welch, of Baltimore; Dr. J. C. Wilson, of New York; Dr. E. G. Janeway, of New York; Dr. Francis Delafield, of New York; Dr. A. E. Malloch, of Hamilton; Surgeon-General George W. Sternberg, of Washington; Dr. D. B. St. John Roosa, of New York; Dr. William M. Polk, of New York; Dr. G. K. Dickinson, of Jersey City; Dr. Eugene F. Cordell, of Cleveland; Dr. William B. Gibson, of Philadelphia; Dr. John A. Wyeth, of New York; and Dr. Robert Fletcher, of Washington.

Dr. James Tyson was toastmaster. He is one of Dr. Osler's oldest friends, and it was he who wrote the letter which brought him to Philadelphia in 1885. Dr. Tyson said that Dr. Osler had, by reason of his career in Canada and in the United States, attracted the attention of physicians all over the country, and had had an influence wider than any other medical man of his generation. This influence, he said, was due not alone to his medical character, but to the breadth of his intellectual sympathies and to the classical, biblical and poetic lore with which his name had always been associated. These, he knew well

enough, to make them subservient to his purposes in the illustration of the great principles of medicine.

Dr. F. J. Shepherd, of Montreal, spoke of Dr. Osler in Montreal, and said in spite of the passage of thirty-five years since they graduated together in 1870, he looked scarcely older, and was not at all changed in disposition from the medical student that he at first learned to know. As a student Osler had been known, not for devotion to his books, nor as one whose main effort was to succeed in passing his examinations, but rather for his attention to the post-mortem room, and to whatever hospital work he could succeed in getting, though these features of the medical course were much less prominent than they were at present. While a serious worker, he was never looked upon as one of those who, in the modern term, was a "grinder," but, on the contrary, was known and loved for his social qualities, for the kindness of his disposition, and for the numerous friends that he made. In his young days there was the characteristic grain of humour that has so often been exhibited in after-life. While he did not graduate high in his class, there is especial note in the proceedings of the convocation, which shows how thoroughly his medical studies were appreciated by the faculty. A special prize was awarded to Dr. Osler's graduation thesis because of the originality it displayed and the research it evinced, and because of the collection of pathological specimens accompanying it, which were presented to the Museum. In the light of his after studies, it was interesting to note that some of these specimens, still in the college museum, concerned the ulcers of typhoid fever. When next Dr. Shepherd met Osler, he was engaged in writing a thesis for the Royal Society of England, of which he had become a highly honoured member. During his teaching days in Montreal, Osler was known for his devotion to his work and his faithful attendance at medical society meetings. His success as a teacher was in accordance with the efforts which he put forth, and the interest displayed in his work. He became an inspiration for his students, and was able to rouse interest in original investigation on their part, such as had never before been seen. His personal magnetism enabled him to gather around him a group of young men, all of whom felt the precious stimulation of his own interest in all medical problems. In other words, even in these early days before he was thirty, Osler displayed the qualities which later were to make his influence felt far and wide in the medical profession in America. He did not allow his practice to trouble him very much at any time in Montreal, and if he kept office hours, those at the college were not particularly aware of the fact. He never kept a chariot,

and, as he used to say himself, this was probably for the benefit of mankind, since those who ride in chariots kill their hundreds, while those who walk kill only their tens. His influence for good over the students in Montreal was felt far beyond the domain of their scientific education, and there was many a young man who felt that he owed to Osler the turning point in his career that made him realize the value of high ideals in life. It was no wonder that he left Canada then with the good wishes of his colleagues in the college, of his students, old and recent, and of the medical profession who had learned to value him. Now that he had united the profession of the United States and Canada in the sympathetic qualities of his genius, his Canadian brothers would welcome him back to the Mother Country, feeling that another stage of his evolution had been passed that would make him even more broadly useful.

Dr. J. C. Wilson, of Philadephia, spoke to the toast of "Osler in Philadelphia as a Teacher and Clinician," and said, in part: We cannot think of Dr. Osler in Philadelphia without thinking of him before he came to us and since he left us. His whole previous career was a preparation for his work there; his half decade of work there was, it now seems, a necessary period of training for the great decade and a half at Johns Hopkins, and the rounded half century since he left off knickerbockers a complete and progressive course of development on this side the Atlantic for the crowning period of an illustrious life upon the other side. No part of it could have been left out. Shakespeare's "Home-keeping youth are ever dull of wit" has the fault of most sweeping generalizations. It is true, they mostly are. But not always. It depends upon the home. Populations have left New England, but who ever heard of anyone leaving Boston? Yet the Boston wit retains the old flavour. From most other places the bright spirits migrate. It has been said that the test of the true American is the impulse to move on. If this be true, Dr. Osler is the very type of an American. And the remarkable thing is that the further he moves the more he is missed. There is no authentic record of the state of mind of that far settlement of Ontario which he left in early infancy, nor of the nature of the repast by which his departure was celebrated. But when he left Toronto there were tears and sorrow and something to eat, and when he left Montreal, the same with singing, and when he took his departure from Philadelphia we had emotions which we could not suppress, together with terrapin and champagne; and now that he is going to leave the country there is universal sorrow and the largest medical dinner ever cooked. Yet there he sits, the embodiment of that imperturbability which he has so charmingly de-

scribed as a medical accomplishment, but which we know to be essential to the mental make-up of a peripatetic philosopher.

I may be permitted to speak of Dr. Osler in Philadelphia from two points of view: First, the influence of our quiet Quaker life upon him, and, second, his influence upon us.

First, then, we at once sought to make a practitioner of him. But of that he would have none. Teacher, clinician, consultant, yes, gladly; but practitioner—no! and that with emphasis. This was partly due to his knowledge of affairs, partly to his temperament. One star differeth from another star in glory. His light was to be bright and guiding and seen of all men. Not for him the dim and shaded light of the sick-room, the patient daily service to the weary sufferer, the tiresome round of daily calls, the vexations failure of the approved method to accomplish the desired result. He recognized his *metier* and carried out his plan. And this gave him time and opportunity and of both he made supreme use.

To an institution traditions are what character is to a man. The traditions of the University of Pennsylvania deeply impressed him. Morgan, Shippen, Kuhn, Rush, Caspar Wistar, were to him living personalities. His actual associates were such men as Agnew, Stillé, Leidy, Pepper and others whom we all know. The lives and characters of these men were not without influence upon the young Canadian, trained in the best way by association with men like Bovell, Howard and Ross, and familiar with the best methods and results of British and Continental Medicine.

Not less important was his connexion with the College of Physicians, with its cherished traditions and magnificent library. Nor is the part played by the Pathological Society to be overlooked. Here he brought his best work, the result of long and keen study, illustrated by the findings in the post-mortem rooms at Blockley, and always met in large measure the sympathy and admiration of the younger men.

So from point to point during the five years he was with us, at the best period of his life, he found the stimulus of tradition, of opportunity and of appreciation.

What did he do for us? He made himself agreeable to the older men and demonstrated to the younger men how medicine should be learned and taught. He broadened our conceptions in regard to the inductive method in medicine. Facts, facts—always the facts. The facts of the ward, of the microscope, of the laboratory, of the post-mortem room. He made it clear to some of the younger men who are now reaping the reward of their work that it is not necessary for every man to be a practitioner in the ordinary sense, but that long

years of hospital and laboratory work constitute a better equipment for the teacher and consultant. He inspired his students with enthusiasm for letters that taught them the rare rewards that come of searching the medical scriptures. He showed that in the democracy of our profession any man is free by a principle of self-selection, to attain the most coveted post of distinction and honour. He pointed out not only to us but to all men how fine and noble the profession of medicine is for those in it who are fine and noble.

He ornamented his discourse with quaint allusions to Holy Writ and The Pilgrim's Progress, but did not in those days say much about Montaigne; and the Religio Medici, and rarely alluded to Plato or Marcus Aurelius. Nevertheless he helped some of us to do a little thinking.

At length, after the fashion of the nautilus, he builded a more stately mansion and left us. We would have fain kept him. But that could not be. Without him the Department of Clinical Medicine at Johns Hopkins, mother of many teachers, might have been childless.

The Old World has given to the New many and great physicians. But these gifts have been returned not so much in number as in kind. The father of Brown-Sèquard was a Philadelphian. Marion Sims passed many years and did much of his best work in London and Paris, and now to the list is added another imperishable name.

I asked a bit ago who ever heard of anyone leaving Boston. There is one famous case—a Boston boy who became the greatest American. There are points of resemblance between that great philosopher and this great physician. In both are manifest vigour of body and intellect, untiring energy, unflagging interest in things and men, manysided knowledge with the wisdom to use it, that quality known as personal magnetism and the gifts of leadership. Philadelphia is fortunate to have been the home of Franklin and the abiding place of Osler.

There are many things that I could say of Dr. Osler, were he not here, that I will not say in his presence. What we leave unsaid he must take for granted. When we are deeply moved we do not say the thing that is next our heart. We take refuge in commonplaces, in persiflage. It is an Anglo-Saxon—an American trait. I speak not as a Philadelphian, but as an American, when I say that it is a good thing for us that he came amongst us. Not only by precept, but also by example, has he been an uplifting influence in our professional life. How far-reaching that influence is this company attests. There are men here who have crossed a continent to break bread with him tonight. The source of that influence is to be sought not merely in his accomplishments as a physician, not in his learning, not in his

wisdom, not even in his well-balanced and buoyant temperament, but in that basic principle which all recognize but none can define, which for want of a descriptive name we call character. It is character that tells and to character all things are added.

Now that he is going away we note that he has a trait that so many of us lack—greatness in little things—method, system, punctuality, order, the economical use of time. These have been the handmaids to his greater gifts. These have enabled him to widen his usefulness to lands beyond the seas.

"Seest thou a man diligent in his business? He shall stand before kings."

Dr. William H. Welch, of Baltimore, spoke to the toast, "Dr. Osler in Baltimore, Teacher and Consultant." He said that it was always hazardous for contemporaries to attempt to pass judgment on those with whom they had been brought intimately in contact. It always seemed worth while, however, that a generation should realize what it considered the value of the work of the men whom it most admired and the reason for that admiration. It would indeed be a precious document if we could have some idea of how much the medical men of his generation thought of Sydenham, and if we could have some notion of the way in which they regarded his ideas, practical, scientific and ethical. We are then making history for a future generation, and there is no doubt that the man who is being honoured to-night exemplifies the highest ideal of the medical profession in his generation. When sixteen years ago Dr. Osler came to Baltimore, the main purpose of the faculty was that the hospital should be an integral part of the medical school, and that opportunities should be afforded for higher clinical training. It seemed for this purpose that students should be made a part of the machinery of the hospital, and it is to Osler that the working out of this part of the plan is due. This indeed represents his contribution to medical teaching here in America. He had stood out originally for a broader preliminary education, for the improvement of medicine than had been the custom before, though he had realized also that many of the men who had done well in the past had succeeded in doing so even with the drawback of defective education. When it was announced that only those holding college degrees could be admitted as students at Johns Hopkins Medical School, he said jokingly, "Dr. Welch, it is a fortunate thing that you and I came in as members of the faculty, otherwise we might not be able to secure admission to the school at all."

His most striking contribution to the life of Johns Hopkins has been

the interest which he has aroused amongst the students, and the personal influence which has enabled him to bring out in them the best of their intellectual and moral points. It is no wonder that his students love to call him Chief, for even the medical profession of the country has learned to have something of that strange feeling toward him, and he has done more than any other American medical man of our generation to bring harmony into our professional ranks. The spirit of friendly cooperation which characterizes the medical societies of to-day is due not a little to Osler's incentive and to his genial qualities. His personality was constantly felt as that of a friend rather than a teacher, and his friendliness was marked by some delicious traits of humour. In Baltimore, he will be very much missed for this as well as for his great teaching qualities. No more will Dr. Thayer come home at one in the morning from some medical meeting to find the placard on his door announcing that he does medical practice for fifty per cent. less than anyone else in the neighbourhood, and when Dr. Opie comes to town, there will be nobody to tell the reporter of his distinguished athletic prowess, the many medals that he holds for athletic events. Many a joke has Osler played on the reporters, but they have more than repaid him in recent times, although it was all unconsciously.

Dr. Abram Jacobi, of New York, spoke to the toast, "The Author and Physician," and said: Years ago, on some public occasion, the subject of to-night's onslaughts commended me for having passed six years of my post-graduate existence without writing, or rather publishing a single line, and seemed to congratulate those whom it might concern, upon my discreet literary behaviour. Him, however,I praise for having written and not ceased to write these several decades; for him art has certainly been long, and opportunities he has not allowed to be fleeting. Indeed, the better part of an afternoon I have spent at the library of the New York Academy of Medicine in the pleasurable occupation of copying the titles of his books, and lectures, and addresses, and pamphlets, and papers.

But lo and behold my disappointment. Part of his books, of which there are, after all, only a dozen or thereabout, in fifty or more editions, he has not even produced himself. For you will admit, and he must confess, that it is only the first editions that should be credited to the author; all the subsequent ones are due not to him, but to the greediness of the public. There are even those who pretend to know that he is no better than a tyro in publishing, in that he never had title pages ready for binding, after every fifty sales, with the inscription: "second thousand," "twentieth" or "ninetieth thousand."

Of cyclopædias and translations he kept going or aided in keeping going, I counted only fifteen; his shortcomings, however, are most surprising in connexion with his sterility compared with the rest of the world's journalistic output. We take in the New York Academy's library one thousand medical (excuse the word, it does not always fit) magazines; the affliction of the Surgeon-General's library is still more deplorable. Now imagine there are many hundreds of them to which Dr. Osler never contributed so much as a line, or as a "how do you do." Indeed, I could not mention the names of more than forty (British and German included) that can boast of his name on their indexes.

You all remember that your friend Horace, when you were young with him, said it was difficult not to write a satire. On the strength of that he found it easy to write as many as eighteen and cut right and left. Our criticism of our guest should, however, not be altogether adverse; indeed, there are six hundred here who are of the opinion that no encomium heaped on this friend of ours exaggerates his deserts. Still I know how to excel Horace, for though it be never so difficult not to pronounce a eulogy, there will be no eulogy of mine here to-night.

I want our guest to feel comfortable among us. That is why I shall become as little personal as possible; and as the occasion is propitious and you are bound not to interrupt me, except on the strongest of provocations, I shall merely try to draw the picture of a medical man such as I have carried in my mind all my life as an ideal to be coveted but never to be realized by any but the physician whom, provided he is at the same time a "philosopher," such as Plato calls "godlike."

Let us imagine a boy with a healthy body, a sturdy heart and an open mind, with as thorough a general, in part classical, education as the training of decades afford. His information is drawn from books and through his trained senses. That young man's inclinations will be toward natural sciences, anatomy and biology; in his clinical studies toward ætiology. Perhaps he remembers from his Aristotle, that "whoever sees things grow from their origin, will appreciate their nature and beauty" and is slow to stop before a problem that appears to be beyond solution. His clinical work as a student and a graduate will be carried on upon the same lines. In late years his hospital will continue to be a school to him, but at the same time a temple, at whose doors he will leave behind him selfish motives; he will give the same time and attention to the poor that he bestows on those outside; where he looks for knowledge he will do so without making the patient recognize that he is a means to an end; he never forgets that the poor

in a hospital, cut off from the world, has nobody to rely upon but his doctor; and his soul goes out to those who suffer most. Indeed, let us of the hospitals not forget that. In that way, two thousand years ago, Christians were made, and nowadays socialists and philanthropists. Many of those who greet us with hungry looks are dying or going to die.

In his private relations he will prove what he is, a gentleman. The Molière period of wigs, and big talk, and sophistical bravado, the food of the credulous, has, or should have passed. Still, you know there is much credulity left among the well fed classes whose education is limited to what their mental blinders allow them to see, inside and outside of legislatures. There would be less of it if medical men would talk to the people less Greek and Latin after the fashion of an ill—or over-trained nurse, and more common sense in an intelligible language. Indeed, it is easy to explain in simple words what we so clearly understand ourselves, even to a legislative committee solemnly considering the needs of the people.

While doctoring with therapeutics, remedial and other, our man will sustain his patient with words and looks coming from his heart, making no cheerless prognoses within hearing, and though his own temperament be gloomy, not letting the patient suffer from that source. For, indeed, there are those who, like Osler's friend and companion, Thomas Browne, are of the opinion that "mundus non tam diversorium quam nosocomium videtur, moriendi potius quam vivendi locus." The world is less a place of delectation than a hospital, more a spot to die than to live in. In consultations, before and after them, he cannot help being strictly ethical. While he recognizes his duties to the patient, he owes regard and respect to the colleagues. The complaint you sometimes meet in the lay public, that there is too much etiquette among doctors, is flimsy. I wish there were more of it. No patient was ever harmed by the attendant or consultant behaving like what they are, or should be, a gentleman. A consultation should be a pleasure, a lesson, and a support to the attending physician. What our friend practises himself he will teach his students in few words, but incessant examples. Perhaps he remembers his Seneca: "Longum iter est per præcepta, breve et efficax per exempla." Precepts travel slowly, examples swiftly, by a short and efficacious cut. There was my good old Frederick Nasse; his kind looks and words, his gentle smile—they have all gone these fifty-four years, but are ever present to my mind. At the bedside, in the quarters of the city poor, or in the wards, he was the friend of the sick, our friend, with the same kindliness, geniality and urbanity that have since warmed my soul in the hospital wards of Johns Hopkins.

As he instructs students, so he teaches his colleagues in the profession and in professional chairs. In so doing he is always kind, but not always in *their* way. Amicus Plato sed magis Amicus veritas. He loves Plato, but what he loves more, is truth. As a member of medical societies he is active, no committee work is shunned though a smaller man might do it, nobody is more energetic in filling the programme of an evening, nobody more conscious of the good medical societies can do to themselves, their members and the public, and nobody more eager to disseminate his own convictions of their important functions.

This teaching, however, is not limited by the fences of his acre or his town. He is of the apostles who is told to travel and instruct and edify. He goes round about the villages teaching. He is here and there and everywhere obeying the invitation of those who want to look into his eyes and listen to the spell of his voice. A thousand miles are to him like one. To him medicine is no private or narrow business; he is the statesman in medicine which to him is not a trade, but a vocation and a religion.

I take the man I speak of to be an American, one of us. He looks about and finds it is not all that is good. Having spent his labour, time and genius on improving his facilities of teaching and learning, he may succeed to the extent of his own locality and school, but he cannot change what must be brought about by the slow progress of laborious and general evolution. When he says publicly and as often as he thinks it may do good, not that we have no great men and efficient teachers, but that clinical facilities and methods of almost all our undergraduate schools are behind what they were in Europe fifty years ago, he is found fault with, perhaps ostracised. The least that is said against him is that he betrays our secrets to foreign lands. They forget that it is not he that betrays our conditions, it is our students, our young graduates who, by crowding into our own post-graduate and European clinics proclaim as it were from the housetops that they came to seek what they lacked at home. You must have noticed that the emigration to Europe of our laboratory students is no longer as numerous as it was years ago, but the search for clinical advantages has not abated. So if you meet a preacher in the desert, do not stone him. In ten years, or twenty, we shall admit he was right. Perhaps it may dawn upon some of us that what we took for invective, was the sensational lie of a penny-a-liner spy, and what our distrust mistook for a frown was the pity and sympathy of a humourist.

As he works for the future so he looks back into the past. A science, a profession is best understood when studied in its origin and

gradual unfolding, like the human organism, which is never comprehended except through the study of the embryo and the child. The history of medicine is in him, however, only a link in the chain of human events, one of the most important parts of universal culture, in which wars and kings are only upheavals and incidents. That is why it should be studied by the people at large as a part of their education. It will be understood when presented in a comprehensible form. You all remember the classical histories written by William Osler on the internal medicine, and by W. W. Keen on the surgery, and R. T. Chittenden on the physiological chemistry of the nineteenth century, and published by the *Sun* four years ago. My medical ideal does much more. The loving connexion between medicine and the world, between the profession and the public is not platonic, it is active. Being a conscientious citizen of the profession he feels his obligations as a citizen of the state and of human society. He will work for the consolidation of the profession, for the suppression of quackery and all other forms of infectious disease; for the improvement of our school system, our streets, our subways and water supplies, for the repeal of bad laws, and the introduction of good bills.

That is what your ideal medical man will do. Smaller men must be satisfied with performing only a share of it. But none of us here or elsewhere has a right to shun common duties. Next to performing great tasks is for us who cannot reach the highest aims, the ambition to work in their service. Ideals are not reserved for those who walk on the mountain tops of human existence. No man or woman should be without a heart, nor without an ideal, and the sense of responsibility to the Commonwealth of which they form a part.

Dr. Osler! Have I involuntarily drawn some, or many, or most of the outlines of your picture, or have I not. I do not know, but I could not help while speaking, beholding you before by mind's eye. Still, being neither an orator nor a poet, nor a *savant* like yourself, I know my language cannot reach my aspiration nor your deserts. Do not explain, or excuse, or deny, either seriously or humourously. Your natural gifts you are not responsible for, so there is really no need of an apology. The lifelong work you invested in your aims and ideals has ever been a labour of love and no hardship. You have not exerted yourself to earn thanks, and expect none. So when you enjoyed your incessant and fruitful toil we have sympathized and profited. When you, fulfilling the obligations to science, the profession and the world, found inscribed in the innermost of your heart, added to the riches of mankind, we have admired and harvested. Your character

and learning, your sound judgment and warm heart, your generosity and consistency have gained thousands of friends. Friends made by such as you are not of the every day's stamp. There is nobody here or outside that came near you that has not been attracted, improved and inspired by you. These are simple statements in the plain every day words of one who, being so much older in years than you, was glad to sit at your feet and will listen to you, no matter whether you are heard in Montreal, Philadelphia, Baltimore or Oxford. As a sort of explanation of your intellectual growth and success, I have heard you speak of your indebtedness to favourable circumstances and to the influence of your descent. Be it so, for as your friend, Thomas Browne, without, I believe, thinking of you, said three hundred years ago: "Non mediocris felicitatis est ad virtutem nasci"—"it is no mean felicity to be born with the imprint of virtue." So your heirloom has actually become ours, indeed; and we take pride in it almost like yourself. What your father and your good old mother, who are often on your lips, have done to shape you, they have done for us also. Tell her we send her greeting and the expression of our reverence and of our wish she may, as we do now and ever, enjoy her son long after this, her ninety-eighth year, and of our gratitude to her, the British mother of one of the greatest benefactors of the medical profession of America.

Dr. S. Weir Mitchell, of Philadelphia, then presented Dr. Osler with a translation of Cicero's "De Senectute." Dr. Mitchell said that the gift undoubtedly fulfilled one quality of the true gift, inasmuch as it was something that the givers would like to keep themselves. As to the appropriateness of it there could be no doubt, and indeed applause of the guests showed already that they realized its aptness to the occasion. One reason of its appropriateness is that Cicero must be regarded as an anticipatory plagiarist, since he had said in a famous passage of this essay, "It is very desirable for man to expire at the right time." As Cicero was probably about sixty years of age when he wrote this essay, he did not state as definitely as the newspapers claim the guest of the evening to have stated just what was the right time for a man to expire. As to his own selection as the presenter of the gift, Dr. Mitchell said that he was the youngest man present, and was therefore naturally chosen to make the presentation, to the most venerable member of the American medical profession. It concerned a subject which the ladies never attained, and the translation had been made by James Logan, the friend and adviser of William Penn. The printing of the copy had been done by Benjamin Franklin, and it bears the date 1744.

Franklin said very appropriately in the preface that as it was only old men who would be apt to read an essay on old age, therefore the

type selected had been especially large, in order that no straining of the eyes might remind them of how much the departing years were taking away from them. This was a story told by the kindly old pagan philosopher of the declining years, the declining years in the sense perhaps that one is compelled to decline all the good things and yet find many subjects for consolation in the years as they go.

Dr. Osler, in replying, said that he could not but feel that the happiness which came to him in the midst of all these manifestations of friendship was undeserved. He felt that he had been singularly blessed in the friends that he had made. He would yield to no man who claimed to have more or better friends than he had, and for this he could only say, "God be praised!" If success consists, he said, in getting what one wants, and being satisfied with it, then, indeed, success had been his since friends so precious had come to him. Always, however, there had been the feeling of lack of desert of the privileges that had come. When the invitation to present himself as a candidate to the position of clinical medicine at Philadelphia reached him at Leipzig, Dr. Osler was inclined to think it must be a joke. He was not sure with regard to it until two weeks later a cablegram reached him to meet Dr. Weir Mitchell in London. Boston measures men by brains, it is said, New York by bawbees, and Philadelphia by breeding. It was Mitchell's task to test his breeding. He did so by having him eat cherry pies, and noting how he disposed of the stones. As Osler disposed of them discreetly the breeding question was settled. Friends had spoken during the evening of his influence on Philadelphia. What he felt as one of the most precious things in his life was the influence of Philadelphians on him. To have been the colleague of such great men as Pepper and Leidy and Agnew and Ashurst, was of itself a liberal education in medicine, a suggestive influence in medical education and in teaching, whose power could not be exaggerated. At Johns Hopkins there had come the opportunity to do for America what had been so well done in Germany, to make a great teaching clinic. If he had accomplished anything, he felt it was by the introduction of Teutonic methods into American medical education.

Dr. Osler, continuing, said that even on an occasion like this he felt that he must say a word with regard to the hospital opportunities that are being wasted in America. In every town of 50,000 inhabitants in this country, there could be a good medical clinic from which would be issuing regularly distinct contributions to medical progress. For this, however, there must be a change in hospital equipment and methods of appointment. If a few men guided the destinies of hospitals instead of many, and if they were not too often the bone of

political contention, then much might be accomplished that now failed. There would have to be properly paid assistants who would remain as resident physicians at the hospital, not for a year or two, but for many years. If this were done, then America would accomplish more for clinical medicine in five years than Germany could do in ten.

He himself had cherished three ideas: Do the day's work well; act up to the Golden Rule, and cultivate equanimity. To do the day's work well may seem too practical to be an ideal, but it is an ideal. To let the future take care of itself, and to do the thing in hand as well as possible represents the only hope for the successful accomplishment of good work. The Golden Rule is an ideal only if it is applied not alone to the professional brethren, but also to patients and to all those with whom one comes in contact. As for equanimity it is the only thing that insures anything like happiness in life. Equanimity enables a man to take success with humility, to enjoy even his friends with humility, and to suffer sorrow and trial without being cast down.

He felt that he had made mistakes, but they had been of the head and not of the heart. He had loved no darkness, he had sophisticated no truth. He had allowed no fear to paralyze his efforts. He left his friends with sorrow and yet with feelings of profoundest joy over their manifestations of kindliness to him and his, and he felt that the bonds though loosened, were not severed.

Reviews and Notices of Books.

American Edition of Nothnagel's Practice; Diseases of the Blood. By Prof. Dr. P. Ehrlich, Director of the Royal Institute for Experimental Medicine, Frankfurt, a.M.; Prof. K. von Noorden, Professor in the Medical Clinic of the Frankfurt City Hospital; Dr. A. Lazarus, Privat Docent in Internal Medicine, University of Berlin; Dr. F. Pinkus, formerly of the University of Berlin. Edited, with additions, by Alfred Stengel, Professor of Clinical Medicine, in the University of Pennsylvania. Authorized translation from the German, under the editorial supervision of Alfred Stengel, M.D. Philadelphia and London: W. B. Saunders & Company, 1905; pp. 714; J. A. Carveth & Co., Toronto. $6.00 net.

The translation of the Nothnagel series of monographs, known generally as the Nothnagel System, into English is from every standpoint a splendid idea, for it may be said that more authoritative books on their respective subjects are not in existence; this is true of the works on Hematology comprised in this volume, and it will be of great use

to the English-speaking medical world to have this series of works upon the blood at its command. Since the work here translated was published some time ago our review lies not so much with the work of the original authors as it does with the manner in which the translators and the Editor have presented their part. Classic as is the work of the authors, it is not to be expected that the last five years, being as they have been rich in all that pertains to the blood, should not have challenged some of the statements, and there are at the present moment many assertions that have to be modified or amplified. This bringing up to-date of the work, has been the province of Professor Stengel, and our idea in reading the work is that he has done it remarkably well. The first part of the book consists of the normal histology of the blood, by Ehrlich and Lazarus, and this, of course, is a fertile field of dispute; it can not be absolutely stated, at this date, what are the real sources of many of the different kinds of corpuscles, and the task of presenting fairly the recent work upon the granular leucocytes, mast cells, etc., is a very great one, but has been adequately done. The second part, dealing with the anæmias from a clinical standpoint, is by Lazarus. Acute post-hæmorrhagic anæmia in the original is so well-rounded an article that it requires but few additions, and the same is true also of the simple chronic anæmias, while pernicious anæmia is more fully interspersed. Our impression on reading this article was that it is as yet more of a compilation of existing knowledge than a definite attempt at authoritative statement, and such must of necessity be the case, for we are yet entirely in the dark as to the etiology and real significance of this interesting malady.

Von Noorden's article upon chlorosis is very concise in the matter of treatment, where he insists upon the necessity of the administration of a sufficient quantity of iron, viz., one and a half grains (0.1 gr.) of metallic iron daily, to be continued through six weeks (for severe cases) without sudden cessation; this, from the German standpoint, is best attained at the Chalybeate Springs. Special mention of this part of the article is not, of course, to the disparagement of the rest.

Acute and Chronic Lyphatic Leukæmia and Pseudo leukæmia, by Dr. Felix Pinkus, and Myeloid Leukæmia, by Lazarus, round up the series; in connection with the treatment of X-rays, the authors and editor are not very sanguine of better results than by the older methods. Mention is due to the bibliography which accompanies each section, which taking note of only the more important works, yet runs in every case into the hundreds of references, and increases greatly the use of the book to those who deal deeply with any of the subjects concerned.

CHEMICAL AND MICROSCOPICAL DIAGNOSIS. By FRANCIS CARTER WOOD, M.D., Adjunct Professor of Clinical Pathology, College of Physicians and Surgeons of New York. New York and London: D. Appleton & Co., 1905. Price, $5.00. Morang & Co., Toronto.

This book consists of 745 pages, 188 illustrations, and nine full page coloured plates. It is written chiefly for the clinician, and as a reference book for clinical, chemical, bacteriological and microscopical laboratories. It is the first attempt in the English language to gather together in one volume a complete and concise statement of the work which has been done in aid of clinical diagnosis by the chemist, bacteriologist and histologist. There is evidence on every page that the author is an experienced teacher of the subject, and evidence also of personal experience of the various tests and procedures described.

The first part of the book consists of a study of the blood, its physiology, chemistry, morphology; it is followed by a study of leucocytosis, and the modifications of the blood in the various diseases under the head of special pathology of the blood, and general pathology of the blood; a section on diseases in which the blood contains parasites, and finally the bacteriology and serum reactions of the blood. Nearly one-third of the entire contents of this volume is devoted to the study of the blood. Among the recent advances in technique in blood examination we find Wright's chromatin stain carefully described, as well as Ruediger's serum test; Sahli's recently described hæmoglobinometer has been added to the list of those which we already know; it is an improved form of Gower's instrument. Oliver's hæmoglobinometer is also described, and its proper place as an instrument for the determination of the colour of the blood has been ascribed to it. Strzyzowski's modification of Teichmann's method of obtaining hæmin crystals, which is noticed for the first time in an English textbook, removes many of the difficulties which attends the production of these crystals. Another new procedure recommended in Donogany's spectroscopic test for blood, which depends upon the forming hæmochromogen.

Part Two consists in the study of the gastric contents, in which very useful information is given concerning the methods of obtaining the gastric juice, the different test meals, the microscopical examination of stomach contents, and a very thorough consideration of the chemical examination including, not only the detection of the free acid and its estimation, but also the detection and estimation of the ferments. Also, there are most excellent sections on the diagnostic value of the determination of hydrochloric acid, of the enzymes and the organic acids. Methods for testing motility and absorbtive power of the stomach are also given in considerable detail.

In Part IV. the Parasites are fully considered, and very completely illustrated. The sputum, secretion of the oral and nasal cavities, etc., form separate parts.

As one would expect, the largest section in the book is devoted to the consideration of the chemical and microscopical examination of the urine. This section is most complete. The newer tests for and studies of the various constituents, and their clinical significance are discussed, and the newer, as well as the older technique, in the chemical and microscopical examinations is described in a very clear and practical manner. The chemistry of the urine is exhaustive, trustworthy and most instructive. The relative value of the different tests has been very justly estimated throughout. We are glad also to find that the recently modified Hopkin's method of determining uric acid is introduced in preference to the unreliable Heintz method.

An interesting chapter is added on the method of examining the efficiency of the kidneys, by the cryoscopic method and the methylene blue method.

An unusual study is added—the examination of transudates and exudates, the technique of the examination of cyst fluids; methods of animal inoculation; the cytology of pathological fluids, etc. A section which will be of special interest to pediatrists is one on the chemistry and microscopy of milk in reference to infant feeding.

An appendix gives an account of the apparatus, indicators, standard solutions, etc., required for the work, with very useful hints as to the methods of determining melting points, preparation of staining fluids, cleaning slides and cover glasses, removing dyes from the hands.

One of the best features of the book is the particularly well coloured plates which are unique in the accuracy with which the colour effects of the eosin and methylene blue stains are brought out. In one plate there are depicted 90 different normal and abnormal red and white blood cells, and another of special interest, at present, shows the phases of the development of the malarial organism. Every method of recent date, together with all discussions, has reference to the original articles; in fact every page has reference to original sources of information, making the book an especially valuable one for use in library or laboratory. It is too large to be used as a textbook by students; but certainly every practitioner who desires to be possessed of the most complete book on the subject of application of chemistry and microscopy to clinical diagnosis should have access to this valuable work. It should have a great influence in stimulating interest in the newer laboratory studies bearing upon diagnosis, and in calling attention to the value of the

results which chemical methods are capable of yielding. The appearance of so elaborate and comparatively expensive volume on the purely laboratory side of clinical diagnoses shows at least that the author and publisher believes that the medical public is beginning to regard a knowledge of exact laboratory methods essential to the mental equipment of an up-to-date physician. We wish Dr. Wood's handsome volume every success.

MALFORMATIONS OF THE GENITAL ORGANS OF WOMAN. By CH. DEBIERRE, Professor of Anatomy in the Medical Faculty at Lille. Translated by J. Henry C. Sime, M.D., Emeritus Professor of Genito-Urinary and Venereal Diseases in the Philadelphia Polyclinic. With eighty-five illustrations. Philadelphia: P. Blakiston's Son & Co. 1905.

A book of three chapters, one hundred and eighty-two pages, well, if somewhat conventionally illustrated. Chapter I., "Anatomy of the Genital Organs," is merely a recapitulation of the facts which appear in any text-book of anatomy or gynæcology, albeit the arrangement is good and the text not overburdened. "The Development of the Genital Organs" is dealt with in Chapter II. Here are only ten pages; the subject is treated in a most elementary fashion, and one searches in vain for any evidence of special knowledge. The more recent work of Marchand, Minot and Berry Hart is not even mentioned. The chapter on "Malformations of the Genital Organs" is the actual book. It makes interesting reading, for many cases are cited. The French literature upon the subject seems fairly well culled. Everywhere is seen the influence of the old master, Geoffrey Saint-Hilaire. On the whole, it is a readable book, and if the information it contains is not very new or complete, it fairly fulfils the ambition of the translator in being both "interesting and instructive."

THE EYE, MIND, ENERGY AND MATTER. By CHALMERS PRENTICE, Chicago. Published by the Author, 1905.

From such a statement as this: "We know that a large majority of cases of drink habit take their origin from nervous irritation resulting from eye-strain," one would be justified in concluding that the author had but a small fund of common sense, and was ready to be convinced upon very slender evidence. Probably Dr. Gould would not be prepared to go so far as that. A case is quoted of a "professional man who was addicted to thirty or forty strong drinks daily," and was cured of his intemperate habits by "fogging and prisms." We do not possess sufficient information to contradict the statement, but we hope it was

so. Many of the author's opinions involve a good deal of conjecture, and we shall not be tempted into the thankless task of denying them. Nor have we the intention of usurping the chair of the scorner of new doctrine. The illusions of this writer have a merit of their own: "In the absence of pessimism there is no such thing as incurable disease;" "the contagion of tuberculosis is a psychic poison," but we cannot give entire assent to his proposition "that it is easier to stop drinking than it is to continue it." This is a diverting book.

The Historical Relations of Medicine and Surgery to the end of the Sixteenth Century. An Address delivered at the St. Louis Congress, in 1904, by T. Clifford Albutt, M.A., M.D., Regius Professor of Physic, in the University of Cambridge. London: Macmillan & Co., 1905. Price 2s. 6d. net.

This volume of 120 pages deals with a large theme. Dr. Clifford Albutt has possessed himself of an enormous amount of material, and he has dealt with it with rare literary skill. It is a new discovery that there is a history of medicine, as absorbing as that of any other science or art, and the author deals with it philosophically and artistically. The great names are passed in review, and the reasons are stated why they are held in remembrance. The book is one to be spoken of with respect and appreciation, and proves once more that a man may be a scholar as well as a physician. It also proves that when the unity of medicine is lost, it falls into sterility.

Dental Surgery for Medical Practitioners and Students of Medicine. By A. W. Barrett, M.B. (Lond.), M.R.C.S., L.D.S.E. H. K. Lewis, London. 1905.

This pocket edition of general dental information is apparently all that the author claims in his preface. It supplies a great deal of useful information on the teeth and their treatment that does not, as a rule, appear in the usual medical course, and will therefore be of benefit to the general practitioner and students of medicine, inasmuch as the condition of the mouth in many cases has much bearing on general health. While it contains much that is of use only to the dental specialist, such as the correction of irregularities, the proper uses of different filling materials, methods of inserting artificial dentures, bridges, etc., it no doubt will fulfil its mission and take its place in the medical library.

International Clinics. Edited by A. O. J. Kelly, A.M., M.D. Vol. I. Fifteenth Series, 1905. J. B. Lippincott Company. 1905.

An editor deserves congratulation who has so much material at his command as is contained in this quarterly, and sufficient skill to arrange

it so well. The volume contains seventeen important papers, besides a complete review of the progress of Medicine during the year 1904. In addition to this there are some fifty plates and thirty figures. We fail to note any reference to work which has been done in Canada, and this, in a book of over 300 pages, we take to be an error of judgment. The paper upon the treatment of Glenard's disease and that upon skin-grafting are important. A new operative procedure for the extirpation of the larynx is described by Francesco Durante.

A Reference Handbook for Nurses. By Amanda K. Beck, Chicago, 150 pages. Philadelphia and London: W. B. Saunders & Company, 1905; J. A. Carveth & Co., Toronto.

Probationers and nurses might do well to have in their possession, Miss Amanda K. Beck's Reference Handbook. The pamphlet is well written—cleverly systematized and shows close observation of the sick-room and hospital régime. The pages devoted to the preparation of foods—and to the application of emergency remedies—should be carefully noted. The book can be recommended as both concise and comprehensive.

Practical Problems of Diet and Nutrition. By Max Einhorn

We naturally look for something unusually good from the pen of Dr. Einhorn, and we are not disappointed in the new book on Diet and Nutrition. Such books are important additions to the libraries of all physicians, and Dr. Einhorn handles ably the matter of digestive disorders.

Transactions of the College of Physicians of Philadelphia. Third Series, Vol. XXVI.

Merck's Manual of Materia Medica, for 1905, seems to be a very complete and satisfactory handbook for the general practitioner. Special mention should be made of Part II. which gives a concise account of of the therapeutic indications—for various conditions and disease. The classification of medicaments and the table of doses are also valuable. The book is small, easy to handle, bound in black heavy cloth.

Medical News.

ONTARIO MEDICAL ASSOCIATION.

The twenty-fifth annual meeting of the Ontario Medical Association will be held June 6th, 7th, and 8th in the lecture hall of the New Medical Building of the Faculty of Medicine of the Toronto University, under

the presidency of Dr. Burt, of Paris. For many years the meetings occupied two days only, but in 1903 there was a three days' meeting. This was found so satisfactory that the Committee for this year has decided to follow the example. Among the invited guests who have promised to attend are Drs. A. J. Ochsner and W. B. Pritchard. Dr. Ochsner is surgeon to St. Augustine Hospital, Chicago, and Dr. Pritchard is Professor in the Post-Graduate College of New York.

The plan for a new General Hospital at the corner of University Avenue and College Street, Toronto, is under consideration by the City Council. It is proposed that the city shall secure the property on College Street from the Dental College east to the corner, and on University Avenue south to Christopher Street, in all about seven acres, as a site for the hospital. The cost will be approximately $300,000. The Ontario Government, it is said, has promised $300,000 more, in view of the increased facilities which will be provided for the hospital clinics for the medical faculty of the university. The hospital trustees themselves propose to raise $700,000, with which to erect a series of modern buildings.

Dr. Charles O'Reilly, for 29 years superintendent of the Toronto General Hospital, has resigned his position. In accepting the resignation of Dr. O'Reilly, it was arranged that it should take effect whenever most suitable to him. His salary will be paid in full up to the close of the present year, and in view of his faithful services for 29 years, it was decided to grant him a further retiring allowance of $1,000 per year for five years from the close of 1905.

A meeting of representatives of a group of four counties—Waterloo, Perth, Wellington and Brant — has been held to discuss the scheme for establishing a hospital for indigent consumptives common to the district named. The delegates agreed to resume consideration of the question on June 2, with a view to preparing a formal plan for submission to the County Councils interested.

The American Medical Association will hold its annual meeting at Portland, Oregon, from July 11th to 14th, 1905. It is expected that at least 2,500 members with their families and guests will attend the meetings, and preparations on a large scale are being made for their entertainment.

Plans and specifications are now ready to be tendered upon for the

erection of the Moosomin General Hospital. The whole will cost between $8,000 and $10,000, and the hospital will be the best of its kind between Brandon and Regina.

Dr. William Henry Johnson, of Fergus, died on the 18th April. He was surgeon Lieutenant-Colonel of the 30th Wellington Rifles.

Retrospect of Current Literature.

MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY, H. A. LAFLEUR AND W. F. HAMILTON.

EDSALL and GHRISKEY. "A Hospital Epidemic of Pneumococcus Infection. *Trans. Coll. Phys.*, Philadelphia, 1904.

In this article a remarkable series of pneumococcus infections is recorded. The first case was one of extremely grave pneumonia, and as he was only half conscious it was impossible to prevent his spitting about the bedclothes and floor. After his death the bedclothes were changed and the mattress aired. The day following, April 4th, a mild case of typhoid was admitted. A blood culture, 24 hours later, showed pneumococci, although no signs of pneumococcic infection were at any time present, unless a rather extensive bronchitis was of this nature.

Case III. was placed in the same bed on April 6th. This was a man with sciatica, who remained in the pneumonia bed for 36 hours and developed pneumonia less than two days after his removal. The crisis occurred on the third day.

Case IV. was one of tubercular meningitis, who was placed in the same bed a week after being in hospital. Two days later the temperature increased, with a leucocytosis of 14,000 and the respiration became rapid. Although positive evidence of pneumonia was lacking, it was suspected in view of the facts concerning the other cases.

Case V. An alcoholic, admitted April 14th, the day after *Case IV* died, and on the 16th developed pneumonia, the crisis followed in two and a half days.

Case VI. A mild typhoid, admitted April 16th, to a bed near the infected one, and again a blood culture showed pneumococcus infection.

The epidemic thus consisted of two, perhaps three, cases of pneumonia, and two cases in which pneumococci appeared in the blood without any sign of pneumococcus infection. A well localized source of infection was present in the first case and the short period of incubation corresponded with pneumonia.

The type of infection was extremely mild. Many writers refer to the virulence of epidemic pneumonia, but there are several instances recorded of a mild form, hence transmission should not be ruled out even in benign types of the disease.

The two cases in which pneumococcus infection occurred, as shown by blood cultures, and without evidence of disease elsewhere, are not without parallel. Proxhaska has reported four cases in which there was no pneumonia and no evidence of other local pneumococcic infection, except bronchitis, and in no case hæmorrhagic nephritis. Baduel and Gargagne, in a household of eleven members, some of whom were seriously ill, and others suffering from catharrhal affections, showed that pneumococci were present in the blood of all eleven cases.

A review of the literature of epidemic pneumonia makes it practically clear that infection may occur, (1) through widespread atmospheric dissemination; (2) through the agency of some local source; (3) through direct contagion from persons sick of the disease.

The chief evidence that contagion takes place in pneumonia is afforded by the large number of instances which have developed in a household after one of their number had contracted the disease. In many cases the person or persons acquiring the disease had slept in the same bed or room with the original patient. That even slight exposure may result in transmission of the malady is suggested by a recent observation by Spaet, when five individuals fell ill with pneumonia in from ten to twelve days after attending the funeral, held in the house, of an individual dead of the disease. The value of the inference is, however, in our opinion, impaired by the somewhat long latent period, and further, by the fact that the disease had been epidemic in the district.

The circumstances attending hospital epidemics, such as that recorded, form the most striking evidence of the contagiousness of the disease. Such epidemics are usually limited to a ward, and the probability that they spread by contagion is very great. Atmospheric conditions seem to be responsible for exclusive and widespread epidemics. v. Holwede and Münnick record an epidemic in a village of 400 inhabitants, chiefly among children, of whom there were about 50. As most of these had been kept at home during inclement weather and in widely separated houses, between which there had been no intercourse, it seems impossible to explain the origin in any other way but by atmospheric infection.

Evil sanitary conditions have been found in areas in which there were local epidemics, and interesting examples of this are quoted. Of late years it has been shown that the pneumococci may retain their

virulence for a considerable time in sputum, or in dust and earth. Sputum dried on linen and not exposed to sun light may continue virulent for as long as 45 days.

SCHWAB and GREEN. "A Case of Cerebro-Spinal Rhinorrhœa. *Am. Journ. Med. Sc.*, May, 1905.

GLYNN. "A Case Simulating Intracranial Tumour, in which recovery was associated with persistent Rhinorrhœa. *Brit. Med. Journ.*, 1905, p. 871.

In 1899 St. Clair Thompson published an admirable monograph in which he records twenty cases found in medical literature of an affection whose most conspicuous symptom was the spontaneous escape from the nose of cerebro-spinal fluid. Of these twenty cases, making 21 with his own, 17 manifested cerebral symptoms, and in 8 there were retinal disturbances. The ophthalmoscopic picture was strikingly similar in alloptic neuritis or post-neuritic atrophy being present, and with this, dilated pupils acting sluggishly to light. The visual fluid was contracted, and vision lost or limited to perception of light.

The fluid in the majority of cases flowed from the left nostril. It varied in quantity from 8 to 24 ounces in 24 hours. Headache and other cerebral symptoms often ceased with the onset of discharge. Thompson suggested that internal hydrocephalus was the cause of the cerebral symptoms, and Glynn believes his case to have been of this nature. In this instance the patient, after striking his head against a beam, temporarily lost consciousness and vomited. In the following twelve months he suffered from attacks of headache, giddiness and vomiting, lasting three or four days at a time. He had also diplopia and weakness of the right external rectus, the pupils were dilated but reacted promptly to light. Vision was normal with the exception of slight concentric limitation of the field of vision, and there was marked optic neuritis.

These symptoms persisted with periods of improvement, and there were added weakness of the legs and a tendency to fall forward, giddiness on stooping, weakness of the arms and volitional tremour, dilatation of the pupils and a nystagmus. His intelligence deteriorated, and on three occasions he had epileptiform convulsions. Sight failed greatly and there was incontinence. Five years after the onset of the first symptoms fluid began to escape from his right nostril, when he immediately began to improve. His sight was restored, optic neuritis disappeared, his mental vigour and muscular strength returned, and with slight loss of energy and memory he remained well. The rhinorrhœa

however persisted, the fluid having all the characters of cerebro-spinal fluid.

The author regards his case as one of acquired hydrocephalus. Some of the symptoms suggested a cerebellar tumour — the nystagmus, ataxy and the reeling gait. The protracted course of the symptoms was, however, more suggestive of hydrocephalus than tumour.

Although the channels followed by the escaping fluid must remain a matter of surmise, it seems probable that the fluid after escaping from the lateral ventricles forced its way forward and along the lymph channels of the olfactory nerve to the nose, an hypothesis which gains some support from the fact that there was anosmia of that side.

Schwab and Green's case was a woman of 32, whose chief symptom was a continuous watery discharge from the right nostril. Eight years previously she suffered for a year from fatigue, frequent headaches, insomnia and inability to work. Four years later there was a sudden paralysis of the left leg, whilst the rhinorrhœa started two years later, being a continuous dripping from the nose of fluid having the characters of cerebro-spinal fluid.

Examination showed evidences of neurasthenic hysteria and there was post-neuritic atrophy of the optic nerves and limitation of the visual fields. The visual acuity of both eyes was well preserved, and the pupils were large and reacted to light. The writers regard optic nerve injury as probably present in a majority of the cases, if, indeed, it is not an essential feature of the disease.

C. J. Martin. "Remarks on the Determination of Arterial Blood Pressure in Clinical Practice. *Brit. Med. Journ.*, p. 865.

The estimation of the arterial pressure by the finger is liable to considerable error. The amount of pressure required to obliterate the artery is estimated by the muscular sense, and a perfectly educated muscular sense gives a good idea of the force applied. A much greater degree of pressure is required when a large area is compressed, hence the force used is much greater in the case of a large artery. Although the pressure in the small carotid of a rabbit is approximately equal to that of the larger one in the dog, yet a much greater degree of muscular pressure is required in the latter instance to obliterate the pulsation.

The writer believes that the systolic pressure only can be taken accurately without opening the vessel. The degree of pressure required to compress the artery itself is very small, about 2 mm. in a healthy vessel, and 5 mm. in arterio-sclerosis: this fact is easily demonstrated by an experiment which is described and figured.

The writer advocates an apparatus like the Riva-Rocci, in which a bag completely surrounds the limb, in preference to those in which a superficial artery is compressed. To obtain accurate results a broader band than is usually employed should be used as the narrow band gives too high readings.

PATHOLOGY.

UNDER THE CHARGE OF J. G. ADAMI.

The Journal of Experimental Medicine.

With the February number of this journal, we have the periodical entering on a new history of its life. As is stated in its preface, the *Journal of Experimental Medicine* will hereafter be published under the auspices of the Rockefeller Institute for Medical Research, and under new editorial management. It will, as heretofore, be devoted to publication of original investigations in the domain of medical sciences, and will, at the same time, serve as a medium of publication for the institution by which it will be issued. The articles published in this number are such as have accumulated during the two years of its suspension. The publication of the journal appears under the names of Simon Flexner and Eugene L. Opie.

PHILIP HANSON HISS, JR. "Differentiation of Pneumococcus and Streptococcus."

The author points out that the pneumococcus and streptococcus can usually be differentiated by their morphological characters; however, certain cultures of these organisms at times approach the type of the other so clearly that it may be impossible to identify them by their morphology alone. The further fact that the cultural characters of the organisms are so nearly alike, that there is much uncertainty in distinguishing them. We are well aware how related organisms, which in themselves may possess distinctive qualities, have a series of intermediate micro-organisms with characters of both. The number and varieties of bacteria intermediate between the B. typhosus at one end and B. coli commune at the other is legion, and when a line in the chain of micro-organisms uniting these two is missing in nature, we can supply it by altering the characters of one by "forced growth." The condition of affairs is closely simulated by the pneumococcus and streptococcus pyogenes. One chief morphological difference has been the presence of a capsule in the former, and in its lancet shape. However, it is not infrequent that a capsulated streptococcus is met with, or that the com-

mon streptococcus pyogenes takes on a diplococcus nature with elongated individuals. Such organisms are differentiated on insecure grounds from the pneumococcus of Fraenkel. Pneumococci which have become non-virulent to susceptible animals may acquire a tendency to long chain formation, and have characters on ordinary media simulating the streptococcus. Hiss has moreover demonstrated that streptococci are possessed of capsules which may be stained by appropriate methods, and hence the presence or absence of a capsule loses its weight in distinguishing these organisms. Hiss has, however, devised an alkaline culture medium, containing ox blood serum and inulin, which, in his hands, has constantly differentiated the pneumococci from the streptococci, the former coagulating the medium. The coagulation of the medium by the pneumococci is apparently due to the production of acid, which does not result in the growths of streptococci.

Martha Wollstein. "The Bacteriology of Broncho-pneumonia and Lobular Pneumonia in Infancy."

The study was undertaken in view of determining the relationship between the extent of the pneumonic areas and the variety of bacteria present, and the difference between the bacteriology of primary and secondary infections. The hundred cases examined ranged in age from eighteen days to three and a half years. In 33 cases of primary broncho-pneumonia the pneumococcus was present in pure culture in fifteen, associated with streptococcus in seven and the staphylococcus pyogenes aureus in three. The streptococcus was found present alone in two cases, and along with the staphylococcus in two others. The staphylococcus was present alone in two cases, with the bacillus coli in one case, and with the streptococcus and Oidium albicans in one other. The author points out the interesting fact that in the two cases of pure streptococcic pneumonia there was no pleurisy complicating it, while both cases of staphylococcic infection and eight out of twenty-five pneumococci infection also presented a fibrinous pleurisy. In all, the pneumococcus was present in 76 per cent. of the primary pneumonias. On the other hand, the author found the pneumococcus present in only 63 per cent. of pneumonias secondary to enterocolitis, diphtheria, measles, meningitis, malaria and other diseases. Other investigators gave the percentage of infections with the pneumococcus at a lower rate than Wollstein; however, the figures can be accepted as representing very fairly the infecting agent in pneumonias in infants.

Other papers in this number of the Journal are, "A Malignant

Teratoma of the Perineum," by R. H. Whitehead; "Dermato-myositis," by W. R. Steiner; "Observations on a Pathogenic Mould formerly described as a Protozoon," by W. Ophul's; "The toxic effect of formaldehyde and formalin," by M. H. Fischer, and "Bacillus mortiferus" (Nov. Spec.) by N. McL. Harris.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The fourteenth regular meeting of the Society was held Friday evening, April 21st, Dr. J. A. Macdonald, President, in the chair.

NASO-PHARYNGEAL FIBROMA.

James Bell, M.D., exhibited a patient from whom he had removed a naso-pharyngeal fibroma. Dr. Bell gave the following account:—

The patient was a young lad of 18, who at eight years of age had a bean removed from the right nostril. In 1901 he suffered from an attack of nasal catarrh, the nostrils being completely blocked in the summer of 1902. Four months ago the blocking was complete, and a tumour was discovered occluding the posterior nares. He was referred to me by Dr. Birkett for operation, and on March 30th I removed this growth, which is a fibroma, and therefore non-malignant.

This was done through the palate. I incised the soft and hard palate, cutting away the bony portion, and getting the finger well in behind it, after separating the mucous membrane with a raspatory. I did the operation with the head hanging over the end of the table. I bring this case because of the very satisfactory result, as far as the operation is concerned. There is so much difficulty in getting access to these tumours, and so many ways of doing this operation, and none of them entirely satisfactory, that I am much pleased with the result in this case. I packed the naso-pharynx, which was bleeding freely, and some days later unpacked and sutured the palate. The suture in the soft palate has given way in one place, but that is susceptible of very easy repair, because there is plenty of tissue, and I think it will unite completely in the hard palate. In my experience, and I have done the operation in a good many different ways, this has been the most satisfactory method. For anterior tumours other operations are probably more suitable: Rouge's operation of turning up the nose, Annandale's operation of splitting the hard palate, displacing the nose and opening or partially excising the superior maxilla.

HYPERNEPHROMA OF KIDNEY.

JAMES BELL, M.D.—This specimen was removed 17 days ago from a patient aged 62, who came under my observation in July, 1902. At this time he consulted me for hæmaturia. There were absolutely no other symptoms whatever, and the bleeding was then assumed to be in connexion with an early stage of hypertrophy of the prostate. There was no residual urine, and no enlargement of the prostate was discovered. He had periods in which he was perfectly well, with no pus or blood in the urine. There was never any pus. In July, 1904, I placed him in the hospital, with a view to making a diagnosis. I tested for residual urine several times, but found none; there was no evidence of enlargement of the prostate, and skiagraphs and careful palpation of the kidneys failed to discover anything. He came back to see me from time to time, and in February last some shooting pains were complained of in the side. At this examination I was now able to discover a large kidney. Taking into consideration that this man had had no other symptom than hæmaturia, no pain, no prostatic enlargement, nothing at all to make one think of stone, and the considerable lapse of time before the kidney became enlarged, together with his age, I made a tentative diagnosis of hypernephroma. I operated and removed this large tumour, which Dr. Keenan has pronounced absolutely a typical hypernephroma, microscopically as it is clinically. The patient is now doing well. The specimen is about the same size and shape as that which I showed a couple of months ago, except that it has a much less amount of fat and a larger amount of tissue of the appearance of soft, new growth, evidently a change which is taking place, the fat being replaced by new growth, resulting in the rupture of blood vessels and causing the hæmorrhages. The mass grew down towards the pelvis of the kidney, projecting into it, just as was the case with the specimen I brought before this Society some time ago.

With regard to the pharyngeal case, of course I think there will be no difficulty in repairing the palate, and only for fear of the effects of hæmorrhage I would have repaired it immediately, and there would have been no difficulty about it. But these operation wounds bleed so furiously that I thought it safer to pack, and therefore left it over. The advantage of operating with the head hanging over the end of the table is that the blood flows out of the mouth, and not into the air passages With regard to the kidney tumour and the diagnosis of sarcoma, I may say that three years had elapsed from the time he had first had the hæmaturia to the time the kidney became palpable. Once a sarcoma

has developed and produced hæmorrhage, it is likely to proceed much more rapidly, and this was one of the points which led to my diagnosis.

CHRONIC SUPPURATIVE OTITIS MEDIA AND MASTOIDITIS---HEALED CASE FOLLOWING RADICAL OPERATION.

W. Gordon M. Byers, M.D.—This young girl, aged 14, was admitted to the Royal Victoria Hospital on October 29th, 1904, suffering from a chronic suppurative otitis media, which had existed since childhood. She had had seven operations performed elsewhere upon the mastoid process. When seen, the external auditory canal was entirely filled by polypi and foul pus; the mastoid process was entirely carious, and the site of a large sinus evidently made by a trephining instrument. This opening was likewise filled with granulations, polypi, and foul pus. Dr. Buller handed the case over to me, and I performed the radical operation on November 3rd. To complete the operation, a small skin-flap was taken from the arm and grafted on over the site of the exposed mastoid antrum. The patient left the hospital at the end of seven weeks, and dressings were applied for about a week more. At the end of that time the condition was as you see it this evening, a clean, sweet, perfectly dry cavity.

There has been no recurrence whatever of the discharge since the operation was performed, and I attribute this satisfactory feature, as well as the rapid epidermization in this case, to the fact that at the end of the operation I closed the lumen of the Eustachian tube by thoroughly curetting away the lining mucous membrane of this structure near its aural opening. Fresh infections were thus prevented by cutting off the only avenue open to the micro-organisms of the naso-pharynx.

Frank Buller, M.D.—With regard to this radical operation, we have no doubt something which has come to stay, and has proved itself sufficiently reliable to justify every practitioner in otology undertaking the operation in suitable cases. Of course it is open to question as to what constitutes a suitable case. I may mention here that one of the points which interest us is the connexion between life insurance and ear disease. It is accepted by most authorities on otology that a discharging ear which had not been subject to attacks of pain, and in which the discharges are not at all offensive, should be regarded as a comparatively innocuous thing. But if the person with otitis media is liable to attacks of pain, and especially if the discharge is of a fœtid character, there is no doubt that it is an exceedingly dangerous condition. It is a recognized fact that a large percentage of people with otitis media perish from brain trouble somewhere between the ages of 15 and 30, and this has

been corroborated in my own experience. One case I well remember was that of a young man who as a boy had a chronic suppurative otitis media of a rebellious character. He grew up, and had been under the care of a physician who practised otology, and had unfortunately got this young man into the way of using peroxide of hydrogen, which has come to be acknowledged as not a very safe remedy to be used indiscriminately in these cases. This young man was attacked finally by headache, and developed acute meningitis and died. This was really a case where hydrogen peroxide probably did harm rather than good from its indiscriminate use. One class of case which would justify one almost in recommending without very much delay the radical operation is where there is a perforation in the posterior superior quadrant of the tympanic membrane, and perhaps a few granulations and a fœtid discharge. By using a fine probe, you may very often feel some bare bone somewhere about the mouth of the antrum, and that is a situation in which caries of the tympanic walls is most likely to occur. It is this class of case which calls for the radical operation without much delay.

R. Kerry, M.D.—The result in this case which Dr. Byers has shown to-night is in every way ideal; the epidermization of the cavity and the thorough and complete drainage is everything to be desired. I do not quite understand, however, why the case should take so long to heal; in ordinary mastoid operations the wound is healed in the course of a month. In our experience these incisions usually unite practically by primary intention, and we lose sight of the cases in regard to treatment in a very much less time, and in following them later I have yet to come across a case of relapse. The operation of skin grafting by Thiersch's method should, I think, rather hasten the healing, and it has not been demonstrated that the prolonged after-treatment is accompanied by compensating advantages. Another point with regard to the pus; both Drs. Jamieson and Byers have emphasized the stinking, foul pus. A pure streptococcus infection is odourless, while infection due to the bacillus fœtidus is not specially dangerous, and I have been in the habit of regarding, with some apprehension, cases in which the pus is not foul. The odour due to caries is of course quite distinctive. As regards cholesteatomata, they can very often be removed a piece at a time. In one case in which the meatus was completely filled I worked for about a month before getting the whole of the passage and attic clear, and was able to obtain a condition in which syringing brought absolutely nothing away; so that I do not quite see that cholesteatoma is an indication for this radical operation. Among the indications for operation, the condition in which blocking of the aditus ad antrum occurs from swelling or otherwise, has

been omitted. When sudden cessation of the discharge occurs, accompanied by an increased severity of the mastoid symptoms, we have to deal with a closed abscess. As you all know, absorption of septic matter and extension of disease occur with great rapidity under pressure, and under these circumstances immediate operation is imperative.

W. H. Jamieson, M.D.—Dr. Byers is to be congratulated on the excellent result of this radical mastoid operation; healing seems to be complete, there is no discharge, and the cavity is lined with epidermis.

In January, 1904, the radical mastoid operation was performed by me with satisfactory results. The patient, a girl aged six, had had an attack of measles the May previously (this disease, according to Bürkner, is responsible for eight per cent. of all cases of chronic suppuration of the middle ear). Two weeks later she developed an acute otitis media of the right ear, followed by mastoid disease, for which she was operated on in St. Johns, but without benefit. On coming to Montreal she was sent to me for treatment. I found her rather anæmic and the general condition poor; there was a profuse discharge in the right auditory meatus, in which, on being cleared away, there was seen to be extensive destruction of the drum-membrane with a profuse, foul-smelling discharge in the middle ear. Behind the auricle was the scar of the former operation, which presented two sinuses, one about half an inch from its upper extremity, the other over the prominence of the mastoid. On examining the naso-pharynx, I found a large adenoid present. As it was desired that local treatment should first be tried, and there being no immediate necessity for operation, this was carried out for some time without improvement, so that it was necessary to operate in January. Under anæsthesia a probe could be passed for fully an inch through the upper sinus inward and forward, and in the lower, directly inward, but for a less distance. The upper sinus, it was later discovered, led into the attic and the lower towards the lateral sinus. In the region of the mastoid cells the site of the previous operation was a mass of granulation tissue and necrosed bone, the disease extending through its entire thickness, necessitating exposure of the dura-mater and lateral sinus to an extent of a little over half an inch in diameter.

The radical operation was performed, all the necrosed bone being removed, including the outer wall and part of the roof of the attic. The antrum, attic, middle ear and mastoid cells were cleared of their contents. The Panse plastic operation was performed on the separated membranous meatus, and the wound behind the auricle sutured and completely closed. The wound was packed through the meatus, all subsequent treatment being carried on through this. On the fourth day

the dressings were removed for the first time. The cavity was found perfectly clean and free from pus. The temperature, which had previously been in the neighbourhood of 100 in the evening, fell to normal, though it rose again, but gradually subsided to normal. Between two and three months after the operation epidermization appeared to be complete, though there was at times a slight discharge, which seemed to be from the Eustachian tube. Marked improvement followed the removal of the adenoid later on. Though the patient has left the city, I heard the other day that she is completely well; there is no discharge and her health is excellent.

R. H. Craig, M.D.—I have done this so-called radical operation three times. A great disadvantage often is the loss of hearing entailed by the loss of the ossicles, but when one considers the close proximity of pus to the meninges, it is the more necessary to consider such a radical operation.

Dr. Byers.—As regards the time of healing, the conditions in the ordinary mastoid operations and in the radical operations are entirely different; in the one case it has to do merely with healing of the flaps, while in the other complete epidermization of the cavity has also to take place. With regard to the odour, since I have studied otology, I have always associated a certain peculiar smell with bone caries, and I believe the sense of smell can be largely relied upon in the diagnosis of this condition. I quite agree with Dr. Kerry that all cases of cholesteatomata do not call for radical operation. There certainly are cases which can be cured by the ordinary methods; but, as a general rule, in cases of chronic mastoiditis the undoubted presence of cholesteatomata is another powerful reason why one should undertake the operation. Dr. Craig has perhaps laid too much stress upon the danger to hearing. Grossman has collected all the material from the Berlin clinic, and shown that in the cases where the nerve reactions had been found to be normal before the operation, in fifty per cent. of the patients the hearing was actually improved, remained unchanged in twenty per cent of the cases, and was made worse in the remaining thirty per cent. These results are in accordance with those which have been obtained elsewhere, and go to show that, while the prognosis must be most guarded, one is more likely to obtain improvement than impairment of hearing.

LANTERN DEMONSTRATION.

The paper of the evening was read by Dr. Byers on the surgical treatment of chronic suppurative otitis media, with special reference to the radical operation. This was illustrated by lantern slides, and a series of mounted bone preparations showing the various conditions.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXXIV. JULY, 1905. No. 7.

SANITARY SCIENCE AND THE VETERINARIAN.

BY

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Human and veterinary medicine are so closely related that the consideration of sanitary matters by one has a direct bearing on the sanitary matters connected with the other. The veterinarian as a sanitarian holds a position of equal importance to that of his medical confrere in a like capacity. He is naturally an expert on live stock matters, and in this respect his services are indispensible to the community from a public health standpoint.

The veterinarian is by education a sanitarian. To more forcibly illustrate this, I can do no better than quote a portion of an editorial from the *American Veterinary Review*. This editorial, stimulated by an announcement of the Faculty of Medicine of Liverpool University that a diploma in Veterinary Hygiene was being offered to veterinarians, on similar lines to the diploma given for Public Health by various institutions in medicine,* is from the pen of Dr. A. Liautard.

"I do not exactly know what the curriculum of the veterinary schools of Great Britain is, but if all the branches which compose the new addition to the Liverpool University were not taught at those institutions, certainly their course was incomplete; and if they were, there can be but little use for a new institution. Hygiene and sanitary medicine are important parts of veterinary education, and have chairs in all European schools."

On this continent the same may be said of the existing veterinary schools. Hygiene and Sanitary Science have chairs, and much attention is paid to their efficiency.

The field is ever widening for the veterinarian with an inclination to study and follow that line of his profession which is intimately identified

Read December 16th, 1904, at the meeting of the Medico-Chirurgical Society, Ottawa.

* American Veterinary Review, Vol. 28, p. 316, 1904.

with Public Sanitation. Health Boards are recognizing the importance of having a veterinarian connected with their department, there being many matters on which he is able to give an opinion of authority. The advantage of having such an individual connected with a municipal board of health is well shown by the results obtained in Montreal. We see in the local press of that city the record of food confiscations. The publicity which these receive cannot fail to exert a beneficial influence on dealers, who, without a constant menace, would for a few cents, sell food which they knew to be unfit for human consumption.

The ever-increasing use of meat as a food product is creating a demand for an authoritative statement as to its wholesomeness, and this demand is fast growing to be an absolute necessity. For this purpose an ante-mortem and post-mortem examination should be required. Not only is it essential for us to be particular about our food supply immediately before and after slaughter, but our knowledge must be far-reaching; it must include a knowledge of the conditions under which the animals were reared, together with the presence or absence of diseases which would be liable to affect those consuming the product.

The contagious diseases of animals probably present a more fascinating field of labour to those veterinarians directly interested in sanitary work.

The history of the recent outbreak of foot-and-mouth disease in the New England States demonstrated very forcibly what can be accomplished by veterinary sanitarians. The live stock interests of the whole of the United States were threatened, representing a commercial value of billions of dollars. In a somewhat less degree was the live stock industry of Canada similarly threatened. There is no doubt that the efficient sanitary precautions then taken by the present Veterinary Director-General, in controlling the movements of animals and their products, were effectual in preventing the appearance of this scourge in Canada.

We have further evidence of what proper sanitary measures will do when devised and carried out by trained veterinarians from the results achieved in dealing with hog cholera. This disease, when introduced among hogs, proves very fatal, and often a breeder has seen the painstaking effort of years swept away in as many days. Hog cholera has caused immense losses in every country where hogs comprise a portion of farm stock. In Canada, after two years of systematic effort, the disease has been almost completely eradicted, with the exception of a small area, which, for years, has menaced the whole country, and even in this

area the disease is less frequently met with than formerly, and will no doubt, in the course of a few more years, be even there an unknown quantity.

The discovery of mallein, a toxine produced by the growth of the glanders bicillus on suitable media, by two Russian veterinarians, von Preusse and Kalning, is of inestimable value in dealing with this equine disease, which every year claims its quota of human victims. No doubt the history of the Ottawa outbreak is still fresh in the minds of many, as well as the fact that the strict sanitary measures then enforced, is responsible for the almost complete absence of the affection in this city to-day. The results achieved can almost wholly be attributed to the intelligent use of mallein in removing those incipient cases which presented no clinical manifestations, but nevertheless would have proved virulent foci without this aid to diagnosis.

Tuberculin has likewise rendered a valuable service in the detection of incipient cases of tuberculosis. Many practical examples are now on record where the sale of a tuberculous herd was the means of disseminating the disease through the sale of the tubercle bacilli with the animals, and the unwitting purchase of both by an innocent buyer. There is at present no excuse for such a condition of affairs, as tuberculin will detect the disease and protect the individual from a large financial loss, at an outlay hardly worth consideration, in view of the saving of many valuable animals from an infection which sooner or later bids fair to materially affect their commercial value.

Scientific investigation is constantly indicating that bovine and human tubercle bacilli have a common origin, and that any difference which may appear in their cultural characteristics or virulence is due to the conditions and surroundings.

The possibility of the contamination of milk with tubercle bacilli is a factor wherever we have a single case of tuberculosis in a dairy herd. Senstrom* has recently shown that tubercle bacilli are not necessarily in the milk of reacting animals, if the milk is drawn under strictly aseptic conditions, and there is no udder lesion. He indicates that the most frequent source of tubercle bacilli in the milk is from the fæces. That tubercle bacilli may be, and are, present in the fæces of cattle affected with lung tuberculosis has been conclusively proven by Ostertag.

Newton,† a very close observer of the milk situation, after indicating that the bacterial content of sewage is recorded to be from one million

* Olaf Senstrom. *Zeit. für. Theirmd.* 1904.

† R. C. Newton, M.D. "Contamina tion of Milk." *Jour. Am. Med. Ass'n*, Vol. 2, 1904, p. 1,337.

to four million per cubic centimetre, and showing the proportion of cow manure it is necessary to have present in the milk to give a certain bacterial content, says: "Hence we observe that a contamination of one-tenth grain of manure, an almost invisible quantity to the unaided eye, per quart of milk gives a bacterial content equal to that of sewage."

It is estimated that Berlin consumes no less than three hundred pounds of cow manure with its daily milk supply. Conn proved that cow manure was very soluble in warm milk, and that subsequent straining would not remove it. Thus it is seen that there is still danger of tubercle bacilli being present in the milk, even if the udder of the animal is not affected.

It may be argued that pasteurization will remove the greater part of the danger from bacterial contamination, regardless of its source. Babcock and Russell * have demonstrated that there is an important constituent of the milk which is also destroyed by this heating process. They have found in milk an "inherent digestive enzyme"—galactase. In their experiments,ether, chloroform and benzol were used to destroy the bacteria, and yet the milk so treated underwent a physical change without an increase in bacterial life. The proteolytic enzyme—galactase—is destroyed at about 75°C., and is considerably injured at a somewhat lower point. The removal of this enzyme seriously affects the digestion of the milk in the human stomach. Are we then justified in the destruction of this ferment to counteract the lack of cleanliness observed when removing the milk from the udder?

The need, therefore, of closer observation as to the health and surroundings of the animal producing this important food is apparent. No individual is better fitted for this work of supervision than the expert veterinarian with a knowledge of the sanitary and hygenic conditions necessary to eliminate as far as possible the contamination of milk supplied by animals under his charge.

Since Pasteur's first studies on immunity, conducted with attenuated cultures of the chicken cholera bacillus, this field has received a great amount of attention. The prophylaxis and treatment of many of the contagious diseases is based upon this theory of an attenuated virus. Anthrax and black-leg vaccines, prepared by the attenuation of the virus, are used in enormous quantities throughout the world.

The most important work of to-day, from the veterinarians' standpoint, is the production of immunity in cattle against tuberculosis. Various workers, among whom Pearson and Gilliland of Philadelphia

* S. M. Babcock and H. L. Russell. Annual Report University of Wisconsin, 1903.

are in the front rank, have succeeded in producing a more or less active resistance to virulent tubercle bacilli of bovine origin. We may yet see the day when the foremost dairies will supply milk, not from tuberculin tested animals, but from animals immunized against tuberculosis.

The preference of Texas fever in the southern United States, and, in fact, in all countries with a semi-tropical climate, has stimulated the artificial production of immunity in cattle from northern latitudes, that new blood may be introduced to improve the stock. The process of immunization is now general in the United States, and is undertaken at various State Experiment Stations.

In South Africa horses are "salted" against "horsesickness." This process is, however, not as successful as is desirable, but some progress has been made. Probably the greatest difficulty is the lack of knowledge concerning the infective agent which McFadyean has succeeded in passing through a Berkfeld filter three times, a Chamberland four times, and through a Chamberlain B, once. Thus it is seen that the size of the infective agent militates against detection even by our best microscopes.

Rinderpest infection has, through veterinary sanitation and legislation, been eradicated in Europe, but in South Africa and in cattle destined for the Philippines preventive inoculation is necessary.

South Africa is a country rich in diseases of animals which will require the services of veterinary sanitarians in their identification and control for many years to come. The work of Koch in this connexion has been of great value, and much light has been thrown on some of the more obscure diseases of that country.

Professors Vallé and Carre, veterinarians connected with the Veterinary School at Alfort, France, have shown that there is an anæmia in horses, which is due to an infective agent. This disease has previously been attributed to some local condition, improper and insufficient feeding, or some defective hygenic condition, but inoculation experiments have proven the fallacy of these agencies being instrumental in the cause of the disease. No organism has been isolated or identified, and the supposition is that the infective agent belongs to the group of so-called invisible microbes.

As researches on immunity progress the need will be created for biological products other than those at present on the market. In the preparation of the biological products now in use, the manufacturers guard the health and sanitary surroundings of their experimental animals by the constant presence of veterinarians who have special training and an inclination for the work in hand. A veterinarian in such a position is responsible, not only for the general health and surroundings

of the animals, but also has charge of the toxine injections, and even in some instances the preparation of the toxine itself, most important details in the production of a potent product. Who but a veterinarian with a thorough knowledge of anatomy and physiology would be capable of exercising intelligent supervision over the care of animals favouring us with such important medicinal product?

Thus the study of comparative bacteriology and pathology has indicated the lines upon which veterinary sanitation must be conducted. This study has also indicated the necessity of the physician knowing something of the diseases of animals. Many medical colleges are wisely adding a veterinarian to their staff, that the students may thereby learn some of the more important facts concerning animals, which fact may be of inestimable value to them in their ministrations to men.

The proper field of the veterinary and the human sanitarian is clearly defined. We should, therefore, endeavour to place the responsibility for the execution and enforcement of sanitary laws on those who, by education, training and experience are best fitted to shoulder the responsibility.

CHORION-EPITHELIOMA,

BY

F. A. L. LOCKHART, M.D., and B. D. GILLIES, M.D.,

Montreal.

It is now a well recognized law that the trophoblastic cells of the impregnated ovum burrow, not only into the mucous membrane of the uterus and tubes, but also into the muscle of these structures. These cells may disappear or they may take on active changes, and produce a most malignant growth, which is called chorion-epithelioma.

This disease was at first supposed to be of a sarcomatous nature, and was so described by Sänger in his historical paper upon the subject, which he read before the Leipsic Gynæcological Society in 1888. This view has now been completely discarded, and the disease is universally acknowledged to be an epithelioma arising from the villi, and to be of fœtal origin.

It almost invariably follows pregnancy, and therefore, as one would naturally expect, it usually occurs during the period of greatest sexual activity, between the ages of 20 and 30; but, of course, there are exceptions to this rule, it having been seen in men and in females, both before the onset of puberty, and after complete establishment of the menopause, in both cases being probably due to teratomata. Out of 275 cases collected by myself, the nature of the previous pregnancy was stated

in 231, being molar in 30.30 per cent.; following abortion in 34.63 per cent.; and full term labour in 35 per cent. This gives a much larger percentage following pregnancies not terminating in moles than where that degeneration does take place; but, when one considers the extreme rarity of hydatid moles compared with the normal completion of pregnancy, it is easily seen how much more often chorion-epithelioma is preceded by a degeneration of the ovum than where such a condition is not present. The lapse of time between the last pregnancy and the appearance of the disease varies from a few days to some years. The longest interval was one of nine years, in a case reported by McCann. Fleischman comes next with a period of six years, while several with a three years' interval have been reported.

No definite active cause for this malignant degeneration has yet been proved, but the occurrence of lutein cysts of the ovary in cases of chorion-epithelioma has been reported so frequently that we are bound to consider the possibility of the excess of lutein cells having an important influence upon it.

The prognosis is always extremely grave, but patients afflicted by this disease recover occasionally, even where it has been impossible to remove the whole of the affected tissue. Where the disease follows abortion, the death rate is highest, while it is lowest in those preceded by moles, the percentage of mortality being 63.73 per cent. after abortions, compared with 52.85 per cent. after molar pregnancies. Much the most frequent site of the original tumour is high upon the posterior wall of the uterus. Several cases have been observed, however, where the disease had originated in the vagina.

The growth may be pedunculated or sessile, and its size varies from that of a hazel nut to that of a fœtal head at term. Metastases are extremely prone to form in (in order of frequency) the lungs, vagina and liver, and, in fact, they have been observed in every organ of the body, not excluding the nervous system.

The symptoms are not pathognomonic, but usually consist of severe hæmorrhage, which is very difficult to check, coming on after pregnancy. Pain is often rather a marked symptom. There may be a foul-smelling discharge, and emaciation, as in ordinary carcinoma. The patient may also have cough and dyspnœa, owing to the metastases. On making a vaginal examination, the cervix is felt to be soft, and the os sufficiently patulous to admit the index finger, which may make out the presence in the uterine cavity of a soft mass of tissue, which feels like placenta. The fundus is more or less enlarged and soft, but it may be firm, never as hard, however, as in carcinoma or fibroid. Masses may also be felt

in the vagina or vulva, varying in size from that of a bean to that of a hen's egg.

The only treatment is early and complete removal where such a procedure is possible. Where this cannot be done, excise as much as possible and use the ordinary measures for keeping the parts clean and aseptic, and for relieving pain.

On examining sections of the tumour under the microscope, processes like villi may be seen, lying between blood-clot and degenerated tissue. In the centre of each process is a certain amount of connective tissue, but this is scarce and loose.

Three varieties of cells are to be observed. The most important cells, and they are those which must be present in order to make a diagnosis of chorion-epithelioma, are the plasmodia. These are large multi-nucleated masses of protoplasm, irregular in shape, and without any definite border. They lie on the outer surface of the villi, and send branches, as a rule, running in every direction. They may, however, be long attenuated masses forming the walls of the blood spaces. It is these cells which penetrate the vessels and the muscle of the uterus. Another variety of cell is a small, well defined polyhedral cell with a large vesicular nucleus, packed together in masses without any connective tissue stroma between them. The third form of cell is large and polyhedral, and is sometimes mono-nucleated and sometimes multi-nucleated. Some of these resemble decidual cells, while others are identical in character with the multi-nucleated giant cells which occur in the decidua serotina. They are arranged in masses, in some parts, without any intervening cell stroma, while elsewhere they are infiltrating, and destroy adjacent tissues after the manner of sarcomata. The small polyhedral cells are those of Langhans, and, when young, are small, but increase in size with age. Their nuclei contain a fine intra-nuclear network, which stains readily. Langhans cells constitute neither a necessary nor an important element in chorion-epithelioma, undoubted specimens of which may be seen without any such cells being present.

The patient, the report of whose case follows, was sent to me by Dr. F. C. Mason, of Massena, New York, whom I have also to thank for the careful after history of the case.

She was a married woman, 47 years of age, who was admitted to hospital on December 1st, 1904. Four years ago (three and a half before the onset of symptoms), she was delivered of a hydatid mole. In June, she began to fail in health, losing strength and weight. At the same time she first noticed a discharge from the genitals, which was bloody, but without odour. This has been present, more or less, ever since, and

two weeks ago she began to fail more rapidly. The discharge had a disagreeable smell for the few days prior to admission. There was nothing unusual about her menstruation. She had given birth to one full term child nine years ago, and the only other pregnancy had terminated in the mole, as above noted. During the last twelve months, menstruation had been irregular, the intervals becoming longer, but for the last five months she has been flowing almost continuously. No history leading to the suspicion of the existence of a pregnancy later than the mole could be obtained. The patient was thin, but not markedly cachectic or emaciated. She was troubled to a slight extent by a cough, but raised very little mucous, and nothing but a few moist rales could be discovered on examination of the lungs.

Upon making an examination of the genitals, a greyish ovoid swelling was seen to be attached to the anterior vaginal wall by a narrow pedicle, which extended from near the external urinary meatus to just below the cervix, leaving a small space of apparently healthy tissue between the two. This growth is the size of an ordinary hen's egg, and slightly mobile. The cervix is soft, healthy and mobile. The fundus is slightly enlarged. hard, rounded and somewhat fixed by a mass to the left, whcih was about the size of the vaginal tumour. A diagnosis of chorion-epithelioma was made, and the removal of the growth was advised.

The operation was attempted on December 3rd, but, on examination under ether, the growth was found to have extended too far into the left broad ligament to permit of anything radical being done. It was decided, however, to remove as much of the tumour as possible. The vaginal tumour was excised, and a large quantity of the diseased tissue in the left broad ligament was scraped away, in doing which the submucous tissue of the bladder was exposed. The cavity thus formed was closed by a continuous catgut suture in layers from below upwards. The cervix was then dilated, and the uterine cavity was curetted, douched and packed with gauze. The curette brought away a considerable amount of tissue, which strongly resembled that of carcinoma.

The patient made a good recovery from the operation, and improved in health and strength after going home, but towards the end of January she began to fail, and died on April 2nd.

Dr. Mason reported that, soon after her return home, a mass the size of the first joint of the thumb appeared in the right labium majus. On January 29th, two growths in the vagina were first noticed. One was situated over the lower end of the vaginal cicatrix, and increased in size until, at the time of her death, it was as large as an egg. The second, about the same size, was placed to the right of the incision, but high up

in the vagina, the two nearly filling that passage. On February 7th, a foul discharge began to flow from the uterine cavity, increasing in amount up to the time of her death. This discharge was thin and bloody, but was quite free from clots or other particles. On February 14th, the labial tumour broke down, discharging into the vagina, and decreasing in size until it was only about half as large as at first. The uterus steadily enlarged, until it almost reached to the level of the umbilicus on the left side. It was more or less smooth, firm and hard. To the right was a nodule, which was smooth, firm and non-sensitive, and was probably a tumour of the ovary. Between the two was an elongated, sausage-shaped swelling, which was most likely the Fallopian tube of that side. This latter mass was rather soft, smooth, somewhat tender and, at times, painful. In fact, most of the pain from which the patient suffered was located here. Towards the end, the patient had a great deal of dyspnœa, cardic palpitation, cachexia, malnutrition and general constitutional disorder, but the only time that there was any rise of temperature was immediately after the operation, when it hovered between 99° and 100° for a few days.

In this case, the primary seat of disease was undoubtedly the vagina, the uterus at the time of the curettage being healthy. Metastases took place in the lungs, uterus, and labia, while recurrance occurred in the vagina. Unfortunately, no autopsy was allowed, so that we have to depend upon the symptoms for our knowledge of the metastases.

Pathological Report.—The specimen submitted consisted of the tumour from the vagina, and the scrapings from the uterine cavity. Of the latter, numerous pieces were hardened in alcohol and imbedded in parafin. Many sections were examined, but nothing abnormal was found. The tumour from the vagina consisted of five pieces of tissue, all presenting the same characteristics in appearance, but varying in size. The largest was about 2cm. and the smallest about the size of a bean. A description of the largest will apply to all. The under surface consists of the vaginal wall, while the upper one presents a shaggy appearance of a dirty brownish colour, resembling clotted blood. On cutting into the tumour, it can be seen to spring from the muscular wall of the vagina, and to be intimately connected with it. It measures between 5cm. and 1cm. in thickness, and is adherent to the vaginal wall throughout its entire extent. The upper surface is friable, and pieces resembling blood-clot are readily broken from it. Near the vaginal surface, the tissues are firmer and more resistant. Pieces were taken from each tumour mass for microscopic examination. They were hardened in alcohol and formalin and embedded in parafin. The sections were

stained with hæmatoxylin and Van Geisen's stain, and weak alcoholic fuchsin. The sections all show practically a similar picture.

Springing from the muscular layer of the wall of the vagina are seen coarse villous prolongations burrowing into a degenerated and necrosed loose tissue. In parts, this necrotic tissue shows a large quantity of fibrin and, in other parts, cells, resembling those of the villi, can be observed irregularly scattered through it. The deeper surface of the tumour shows clotted blood, which can be readily recognized here as well as in other parts of the masses. The cells of the villi are of several kinds, which vary greatly in their morphology. The main mass is made up of large mononucleated spheroidal cells with a clear protoplasm, and resemble epithelial cells in their appearance and arrangement. In certain of these cells the nuclei are vacuolated. Other cells, and these are especially striking in their appearance, consist of irregular large masses of protoplasm, which stain deeply, and shows a granular or reticulated structure. The shape of these protoplasmic masses varies, being at times flat and elongated, or else rounded, or branched at one end. They also differ in size. Lying within these masses are seen nuclei, which are either oval or rounded, and vary in number from three or four to twenty or more. The relation of these characteristic masses to the clear cells spoken of as above is not always the same. At times, the former lie as narrow nucleated masses outside of or bordering on the clear cells, while in other places none of the latter are to be seen, and yet the plasmodia are abundant. One other form of cell deserves mention. It is rather large, stains deeply, and contains a large, round, single nucleus. These latter cells are scattered throughout the tumour mass, especially with the plasmodia, but also in the necrosed areas. Numerous polymorphonuclear cells are present, and at the edge of the growth, where it can be seen pushing up from beneath the vaginal epithelium and causing its destruction, are numerous small round cells.

The supporting tissue is scanty in amount, and of loose structure, arranged about and lying between large masses of the tumour cells. In many places, no supporting tissue is seen, but only large syncytial masses, and cells of Langhans, lying loosely arranged in necrotic tissue. Within this supporting structure are seen thin walled blood spaces and capillaries.

The diagnosis of chorion-epithelioma is made from the macroscopic appearance, but especially from the microscopic, which at once strikes one as being similar to that presented by a section of the placenta. The irregular arrangement of the various parts to each other, the proliferation of the cells of Langhans, and the fact that the tumour had arisen out of place, all point to its malignancy.

FIBRO-CHONDROMA OF THE UPPER JAW.

BY

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Montreal.

The case which I am presenting this evening is one of a large Osteoid Fibro-Chondroma of the upper jaw, which was removed at the Hotel-Dieu by Dr. Marien, who has asked me to report it for him.

The patient is 44 years of age; has been farmer and lumberman. His family history is negative. The patient was born of healthy and long-lived parents. He is the father of 15 children, all of whom were born healthy. As a child he had measles, scarlet fever, and diphtheria, and at the age of 23 he had pneumonia. Since then his health has always been excellent.

In 1891 he was kicked in the face by a horse, which caused profuse bleeding from the nose and mouth. When the bleeding stopped no visible wound was left, and he suffered no further inconvenience.

In March, 1899, the present condition began. A small, hard and painless mass developed behind the alveolar margin opposite to the second left incisor and left canine teeth, both of which were carious. This swelling increased steadily, and in July he was unable to hold his pipe in his mouth. In December of the same year he found his strength decreasing, and was forced to cease work. His appetite remained good, and he slept well.

In March of the following year the mass grew painful. The anterior surface grew red and swollen. The temperature rose, and the patient had frequent chills coming, as he says, at 9 o'clock every morning, and lasting from half an hour to an hour. He remained in this state for two months, when the spontaneous opening of an abscess gave him relief. A quantity of pus and a sequestrum of bone, about an inch and a half long and three-quarters of an inch in breadth, came away. A fistulous opening remained, and the patient's condition improved.

During the next three years similar abscesses formed, accompanied by the same severe inflammatory symptoms, and always ending with the spontaneous formation of a fistulous opening, and usually with the discharge of a sequestrum of variable size. These attacks reduced his weight from 185 to 130 pounds.

Since the month of March, 1904, no more abscesses have formed, and during the summer following, the patient's appetite, weight and strength improved. The mass, however, grew steadily, till last autumn, when

Read before the Montreal Medico-Chirurgical Society, 17th May, 1905.

L. S., 44 years, resident of Joliette. Entered the Hotel Dieu on 13th March. Operated on, 30th March.

the rate of growth increased, and the man was admitted to the Hotel-Dieu on March 13th, 1904.

On examination the patient presented a large mass protruding from the mouth, and bulging out the skin over the upper jaw, especially on the left side. In its greatest circumference the mass measured 53 centimeters, or 21 inches, which is about the size of a normal adult head. In shape the tumour was irregular and knobby, and its surface was divided into lobes by deep sulci, from which this watery pus exuded. The colour was a dark red, with numerous yellow and grey ulcerating patches. The cheeks were bulged, especially on the left side; the skin tense and congested. The nasal apertures looked forwards and slightly upwards, and were widely stretched laterally. The lips were flattened and stretched, the total contour being 47 centimeters, about 19 inches. The orbicularis muscle still preserved its power. The hard palate was deformed by the unequal growth of the tumour, and a few teeth remained in abnormal and widely separated localities.

Examination of the pus gave negative results as to tuberculosis or actinomycosis, and a diagnosis was made of non-malignant tumour, probably fibro-chondroma.

On March 30th the mass was successfully removed by Dr. Marien.

Preliminary high tracheotomy having been performed, a median incision was made to the nasal septum, and thence around the nostrils, and along the lower margins of the orbits to the external canthus on either side, and the flaps raised. On the right side the orbital periosteum was detached, the molar bone and nasal process of the superior maxilla cut through, by means of a specially large gouge. On the left side the lower orbital margin was left untouched, the molar and nasal process of the superior maxilla was sectioned, and the rest of the superior maxilla was removed by chisel from the orbital plate. The mouth was then forced open and the last two molar teeth extracted. The muco-periosteum was cut transversely, and the hard palate cut through by hammer and gouge about the junction of the maxillary and palatine bones. The mass was then detached by scissors, and the hæmorrhage, which was not profuse, was controlled. The cheeks and lips were then sutured in the usual way.

When removed, the mass was found to be quite hard, and weighed three and a half pounds.

Sections through the mass at different points showed that it was of the same consistency throughout. It is composed of cartilaginous tissue, in which are embedded numerous small bony masses, quite separated

from one another by the intervening cartilaginous tissue. The arrangement of the sulci makes it apparent that the mass in front can be divided into two parts corresponding to outgrowths from each superior maxilla.

Microscopic examination of sections from this tumour show fibrous, cartilaginous and bony tissue in varying proportions, and confirm the diagnosis of osteoid fibro-chondroma.

The patient made a satisfactory recovery, and was discharged May 24th.

The points of interest in this case are: *First*, the formation during over three years of a series of spontaneous abscesses, which seem to have originated towards the centre of the mass, possibly in either antrum; *secondly*, the patient's health and strength, when admitted, were good, despite the existence of the tumour for five years; *thirdly*, the slow growth and non-malignancy of the mass, although one of the sections taken from the anterior surface of the tumour shows, by the large number of cells, a tendency to sarcoma; and, *finally*, its large size, as tumours of its dimensions at the present time are extremely rare, and for descriptions and engravings of them one has to look chiefly to text-books of a century ago.

POISONING BY NITROUS OXIDE GAS.

BY

C. J. EDGAR, M.D.

During the last few years manufacturers of nitric acid have found that, after the inhalation of certain gases evolved in its manufacture, some of their employees developed symptoms which occasionally resulted in death. The wide difference in the symptoms shown in different cases, the comparative infrequency of fatal results, and the instability of the gases responsible for the poisoning have until recently prevented an intelligent study of the subject. The gas or gases which are so dangerous are all grouped together under the general mass of "nitrous vapours" or "nitrous fumes," and consist of nitrogen monoxide, dioxide or trioxide, according to the amount of its dilution by the surrounding atmosphere. It is probable that the less the dilution with oxygen the more fatal will be the effect of the fumes, but even this is uncertain, as it is quite possible that its dilution to a point allowing of its easy inhalation renders it still more dangerous. Cases occur with some frequency where, after working for some time exposed to these fumes, a tightness is felt across the chest, with a sense of suffocation, accompanied with cough and some bloody expectoration. These symptoms usually pass off in a few hours, but occasionally a sharp bronchitis or even congestion

ensues. Indigestion, anæmia and general malnutrition are frequent among this class of workmen, and cramps, followed by vomiting, occasionally occur. Cases have been reported of death caused by cramps coming on suddenly some time after the inhalation of these fumes, but details are lacking, and the explanation that death is caused by the vapours being oxidized in the human body to nitrous acid is far from satisfactory.

During the ten years in which nitric acid has been manufactured at the works of the Nicholas Chemical Company at Capelton, Quebec, only two deaths have occurred from these fumes, and these were both from œdema of the lungs, which came on gradually, and only began apparently some hours after the inhalation of the gas.

The task of cleaning out the residue which forms in the tanks in which the acid has been stored, and in which the concentrated fumes have been accumulated, seems to be especially hazardous; both deaths having occurred in men who had been thus employed. In the first case, after having done this work in the morning, the man went home to dinner, but complained of not feeling well, the not uncommon symptoms mentioned above being present. During the afternoon the symptoms increased in severity, but as there had never been a fatal case neither his friends nor his physician felt much anxiety. During the night, however, the pain and dyspnœa increased with great rapidity, and death ensued about six a.m. The autopsy revealed the usual condition found in death from œdema of the lungs; both of these organs being full of bloody serum throughout their entire extent.

In the second fatal case, the man, after doing the same work as had been performed by the other victim, went home about five in the afternoon, had his supper and then, in company with a friend, drove to Sherbrooke, a distance of eight miles. He made no complaint of feeling unwell, but spat some blood during the evening. He returned home about midnight and retired, but about three a.m. was taken very ill, with pain in the chest and dyspnœa. Symptoms of acute œdema of the lungs quickly appeared, and in spite of all efforts the man died in about twenty-four hours.

The autopsy in this case showed an exactly similar condition to the first; the entire area of both lungs being infiltrated with bloody serum.

Until the occurrence of these two deaths at Capelton, the inhalation of these nitrous fumes had not been looked upon by either the company or their physician as likely to prove fatal, and one at least of the victims had repeatedly performed the work before, without evil results. Therefore, previous to the first case, nothing had been done beyond the issuing

of printed rules for the guidance of the men while engaged at this work, the most important of which were that the men should always have help within reach should they be overcome by the vapours, and that they should only enter the tanks for a certain limited number of minutes at a time. It both cases it was afterwards claimed that the victims had violated the latter rule, and had not come out of the fatal tank for fresh air as instructed.

The literature on the subject was practically nil, and no antidote was known at the time the first death occurred, but shortly afterwards a contrivance, consisting of an inhaler containing a sponge saturated with alcohol 95 per cent., and worn over the mouth and nose, was introduced by Mr. Prichard, the superintendent of the chemical works at Capelton. This promised well theoretically, the chemical equations giving probability to the supposition that the nitrous fumes would be neutralized by the alcohol in their passage through the sponge, but as the second unfortunate man was wearing one of these inhalers at the time he did the work which caused his death, this hope was rather rudely dispelled.

Lately, however, Erich Weiskopf (*Zeitschrift für angewandte Chemie,* 1904, p. 122), has advocated the use of chloroform internally in three to five drop doses given in a glass of water every ten minutes, and the management of the Powder Works at Troisdorf, near Cologne, have given notice to their workmen that if any employee has breathed nitrous vapours the foreman or chief of the department must see that chloroform is administered in this way. In the works at Capelton several cases have since occurred, in which the initial symptoms were quite as severe as in the fatal ones, and in each case prompt recovery has followed the administration of the chloroform as suggested by Weiskopf.

The convulsions said to occasionally occur after the inhalation of nitrous or nitric acid vapours are explained by Dr. Seyffert, manager of the Powder Works in Troisdorf, as a reflex effect of the inhaled vapours upon the smallest sensory nerve endings of the respiratory tract. If these convulsions affect the heart, lungs or diaphragm, they may, if too long continued, cause death. Dr. Seyffert ascribes the beneficial action of the internal administration of chloroform to its well known power to inhibit, or at least to decrease, convulsive conditions or conditions of reflex irritability.

Convulsions have not occurred, however, in any of the cases at Capelton, and both of the fatal cases were due to œdema of the lungs, secondary, in all probability, to an acute congestion produced by the inhalation of these irritant gases.

The impossibility of recognizing serious cases of poisoning by nitrous

oxide gas, until it is too late, as shown by the complete absence even in fatal cases of unusual symptoms for some hours after its occurrence, renders it absolutely necessary, as is done at Capelton, for every workman thus exposed to receive immediately the chloroform treatment, as here laid down, and, so far, no fatal cases have been reported where this was done.

ROYAL VICTORIA HOSPITAL: TYPHOID FEVER REPORT FOR YEAR 1904.

BY

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During the year 1904, 154 cases of typhoid fever were treated in the wards. Of these 97 were men and 57 were women. The admissions each month were as follows:—January, 21; February, 8; March, 5; April, 5; May, 13; June, 6; July, 18; August, 26; September, 6; October, 9; November, 4; December, 33.

The average age of the patients was 20.76 years, the oldest being 48, and the youngest four years.

The average number of days in the hospital was 40.27, the longest being 166, the shortest being one day.

The average number of days of fever while in the hospital was 21; the longest, 132 days, which was a case complicated by phlebitis; the shortest was one day, where patient would not remain in the hospital. The next longest case was one with a moderate amount of fever and relapse; in this case the fever lasted 84 days.

In one case the temperature rose to 106°. This was a girl of nine years, who was admitted on the 9th day of disease. Her fever ran high, and lasted for 26 days. Patient went out cured 47 days after admission.

The patients were admitted at different times in the course of the disease. The average day of disease on admission was the 13th, but it ranged from the fourth to the 73rd day.

In eleven cases there were other cases of typhoid in the house at the time the patient was admitted to the wards. Two of these were resident in the hospital. In the other cases it was noted that typhoid fever was present in houses close by the homes of the patients.

SYMPTOMS:

(1) *Diarrhœa* occurred during the onset of the disease, and after admission to the wards, in 43.5 per cent. of cases, while constipation was an early symptom in 20.7 per cent. As a rule, all the patients, while

in the hospital, were constipated, and were treated with soap and water enemata every third day.

(2) *Epistaxis* occurred in 24.02 per cent. of cases, and was generally one of the first symptoms, but occurred several times during the course of the disease.

(3) *Vomiting* occurred in 37.6 per cent. of cases, and was almost entirely at the onset of disease.

(4) *Delirium* was present at some time during the course of the disease in 12.33 per cent. of cases, and was almost entirely of the quiet, muttering type.

(5) *Chills or Chilly Sensations* were experienced as follows during onset of disease:—Nine patients had chills during the course of the disease, varying in time from the second to the tenth week, and these chills seem to have occurred in the more severe cases, as six of the nine cases showed some complication. One patient (Case No. 9407) on the fifth day of normal temperature had a chill, and his temperature rose to 105.3°, and then fell to normal during the following 12 hours. The next day he had another chill, and his temperature rose to 105.40°, and fell to normal the same evening. Careful examination failed to find anything to account for this temperature. On the day of the first chill the leucocyte count was 7,000, and later 9,000. On the second day it was 12,000. The pulse remained about the same, and patient looked and felt quite well.

Eruption.—Rose spots were present in 81.16 per cent. of cases. They were present on admission in 53.9 per cent of cases. It was definitely noted in 58.44 per cent. of the cases, when the rose spots disappeared, and the average duration of the eruption in these cases was 11 days.

Spleen.—The spleen was palpable at some time during the disease in 62.3 per cent. of the cases. It was palpable on admission in 43 per cent. of the cases. In 58 per cent. of the cases it is definitely stated when the spleen disappeared, and in these cases it was palpable during a period of between 17 and 18 days.

Ehrlich's Reaction was present in 49.3 per cent. of the cases. It was present on admission in 18.8 per cent. of the cases. It occurred as early as the fourth day of disease, and as late as the 74th day. The average date of occurrence in the cases in which it appeared was the 13th day of the disease.

The Widal Reaction was positive in 86.3 per cent. of all the cases. Some gave it as early as the sixth day of disease; another not till the 60th day. The average date of appearance of the reaction in these cases was the 18th day of the disease, that is, an average of five days after admission of all cases.

All the patients were given full liquid diet, but about one-half the cases were given soft foods as well, from the time of admission. Tub baths or sponge baths were used in the treatment of all cases for temperature of 102.2° or over. Twenty-nine cases were given sponge baths only. In all, 1,320 tub baths were given and 732 sponge baths. Soap and water enemata were used in all cases.

Of the 154 cases, 145 were discharged cured and nine died—a mortality of 5.84 per cent. Of the nine cases, one died of œdema of the glottis, two of hæmorrhages from the bowels, three of toxæmia, two as the result of perforation of the bowels and one as the result of perforation of the gall bladder.

Relapse occurred in nine per cent. of the cases. It occurred as late as 12 days after the temperature had become normal, but on an average it occurred seven days after.

The fever of the relapse lasted 28 days in one case, but on an average lasted only ten days.

Complications of more or less severity occurred in 37.6 per cent. of the cases. Arranged under the various systems they are as follows:—

Lymphatic System.—Tonsillitis occurred in three cases.

Circulatory System.—Femoral phlebitis occurred in five cases. It occurred in both legs in one case; in left leg in one case, and in right leg in three cases.

Respiratory System.—Pneumonia occurred in four cases; pleurisy in three cases; empyema in one case, and acute glossitis and œdema of larynx in one case.

Digestive System.—Hæmorrhage from the bowels occurred in twelve cases; multiple and severe in seven cases; and single and slight in five cases; perforation of bowels in three cases; perforation of gall bladder in one case; gastric ulcer in one case; appendicitis with abscess in one case.

Locomotor System.—Acute rheumatism with erythema multiforme occurred in one case; erysipelas in one case; furunculosis in three cases.

Genito-Urinary System.—Pregnancy occurred in two cases; retention in seven cases; acute nephritis in three cases; sub-acute nephritis in three cases.

Nervous System.—Hysteria, with the cataleptic state, occurred in one case.

Special Senses.—Suppurative otitis media was noted in six cases.

The following is a brief summary of the nine fatal cases:—

1. O. N., age 19, occupation waiter, was admitted on December 19, 1903, on the fifth day of disease, complaining of headache, loss of

appetite, pain in the right side, cough and toothache. On admission, the patient was a well nourished young man, weight 164 lbs.; had some slight cough, tongue furred, had some bad teeth. Mind clear. Temperature, 100.3°; pulse, 96; respiration, 20. On the seventh day of disease, rose spots appeared; the spleen was not palpable. The Widal reaction was given on the 15th day. On the 19th day the patient began to complain of a sore throat, and the pharynx on examination appeared reddened. Toxæmia began to be well marked at this time. By the 26th day the patient was delirious, and had attacks of retching; the throat was very sore and dry, the toxæmia marked. Two days later he began to have involuntary stools and incontinence of urine. On the 29th day of disease, at three-thirty a.m., the patient complained of a choking sensation. He was seen at four-forty a.m., when the tongue was enormously swollen and red, filling the whole mouth. There was much swelling below the angles of the jaw and upper part of neck on both sides. There was some purulent discharge from the ear.

The breathing was difficult and accompanied by the sound of mucus in the throat. The respirations were not more rapid than formerly, remaining about 26. The pulse remained about the same, as it had been for the last three days, 120 per minute. The patient became more and more cyanosed, and had increasing difficulty in opening his mouth. Shortly after six a.m. he stopped breathing without any struggle, giving only a gasp about every fifteen seconds. Tracheotomy was performed, and artificial respiration was kept up for some time, but without avail. The patient died at six-fifteen a.m. The spleen had never been palpable.

An autopsy was held eight hours after death. The amount of ulceration in the bowel was comparatively slight, and the ulcers were not deep. There was, however, an intense general acute inflammation of the lining of the intestines. There was intense inflmmatory œdema of the epiglottis and glottis, which at autopsy was sufficient to practically occlude the opening; there was also an acute septic glossitis and pressure ulceration of the upper part of the oesophagus. Cause of death—Œdema of glottis and epiglottis.

2. W. P., aged four, admitted January 31st, 1904, on 21st day of disease, complaining of abdominal pain.

Patient had been ill for three weeks with diarrhœa, and some abdominal pain. The afternoon before admission the abdominal pain became more severe, and he began to vomit and have more diarrhœa.

He was seen by a physician in the early evening, and found to be in a state of considerable prostration. Pulse, 160; temperature (by

rectum), 102. There was some rigidity of abdomen. The following morning his condition was worse, and he was sent to the hospital.

On admission, the patient was a poorly nourished pale child of about four years. Lips were dry and cracked, and the face had a drawn expression; skin hot. The child lay on back or left side with knees drawn up. Pulse rapid. Abdomen full, slight protrusion of umbilicus, and considerable resistance on palpation, most on the right side. There was pain on pressure, and also when the pressure was removed.

On percussion, there was liver dulness. On rectal examination, there was pain on pressure upwards, and some fullness of pelvis.

Leucocyte count, 8,600; *Widal reaction,* positive. Patient was operated upon the same night, and two small perforations found nine and thirteen inches above the ileo-caecal valve, and free pus and gas in the abdomen.

The patient did fairly well for some days, but died twelve days after the operation. Cause of death—Perforation of the bowel, with peritonitis.

3. W. L., age 30, mechanic, admitted February 18th, 1904, on the tenth day of disease, complaining of headache, pains through the body, vomiting, chills, epistaxis and diarrhœa. On admission, patient was a well nourished, well developed man of about thirty years. Mind clear. Temperature, 103.3°; pulse, 112; respiration, 24. Pulse dicrotic, tongue coated, some soreness of abdomen, but no tenderness or rigidity; some rose spots visible over surface; spleen not palpable. Leucocyte count, 4,000; widal reaction, negative.

Patient was in the hospital eight days, during which time he became more and more toxic. At first he was only slightly irrational at night, but this became more and more marked, with increasing rapidity and softness of the pulse, and involuntary stools and urinary incontinence.

In spite of cold baths and stimulants internally, patient died on the 18th day of the disease. There was never any signs of blood in the stools, no tenderness in abdomen, and only slight distention. Leucocytes on the day of death were 5,400. The urine showed only a trace of albumen. The Widal reaction was always negative.

Autopsy one and half hours after death showed typhoidal ulceration of ileum and colon of about two weeks' standing. There was cloudy swelling of all the organs, and collapse of the lower lobes of both lungs. At autopsy the Widal reaction was positive. The lower lobes of both lungs were dark and airless and dry, a condition difficult to explain, except possibly as the result of an old pneumonic condition. Cause of death—Toxæmia.

4. M. S., age 28, telegraph operator, admitted April 30th, on the seventeenth day of disease, complaining of headache, vomiting, and weakness and sore throat.

On admission, patient was a rather anæmic young woman, cheeks flushed, lips dry and cracked, skin hot. Mental state normal. Temperature, 103°; pulse, 123; respiration, 24. Pulse rapid and soft, abdomen distended and many rose spots over surface, spleen not palpable. Urine contained albumen and a few blood casts, and gave a marked Ehrlich's reaction. During the first night patient complained of severe abdominal pain coming on shortly after being given a tub bath. There was some resistance over right lower quadrant of abdomen. Hot applications gave some relief. Leucocyte count, 6,600. On May 6th, patient was still complaining of sore throat, so was examined by Dr. Birkett, and nothing was found to account for the severe pain complained of. The Widal reaction was positive the same day. In the evening patient had a slight chill.

The following day patient was still complaining of abdominal pain, and had another slight chill. Leucocyte count, 5,200. The night of May 8th, patient was very restless, and moaned a great deal, and complained of pain across lower portion of chest. On the morning of May 9th there was some slight rigidity of right side of abdomen; pulse small and weak and rapid. There was no distention of abdomen, liver dulness coming well down to costal margin. Leucocytes, 4,200. On May 10th, early in the morning, pulse 152, respirations, 52, the abdomen distended and tender, but no rigidity. At one-fifteen p.m. the abdomen was noticed to be rigid, and patient was immediately taken to the operating room and the abdomen opened.

A perforation the size of a twenty-five cent piece was found in the posterior wall of the gall bladder. There was also general peritonitis.

The perforation was closed and the abdomen flushed out, but the patient died soon after reaching the ward. No post-mortem was held. Cause of death—Perforation of the gall bladder with peritonitis.

5. L. K., laundryman, admitted May 5th, on the 28th day of disease, complaining of headache, pain in the stomach, cough, with reddish expectoration.

On admission the patient was a poorly nourished Chinaman. Expression dull, lips and tongue dry and cracked. Mind clear. Had some cough, and there was marked cyanosis of fingers. Temperature, 103.2°; pulse, 120; respiration, 44. Pulse soft and rapid. Some rose spots, spleen greatly enlarged, Widal reaction positive. Patient continued to run a high temperature, with steadily increasing

pulse rate and deepening toxæmia. On admission he had early signs of consolidation at the right apex, and this became definite the day after. Patient died four days after admission. A post-mortem was held sixteen hours after death, and a great deal of ulceration found in both large and small intestine. There was also pneumonia of the upper right lobe. Cause of death—Typhoid with pneumonia.

6. M. B., age 29, domestic servant, admitted July 3rd, on the eighth day of disease, complaining of headache, weakness and diarrhœa. On admission—Patient, a very well nourished young woman of about thirty years, face flushed, lips dry, conjunctivae suffused, skin warm. Temperature, 101.4°; pulse, 120; respiration, 24. Pulse soft, lungs clear, no rose spots seen, spleen not palpable. No Widal reaction; leucocytes, 5,400. Patient's condition remained about the same, and she continued to run an ordinary course till the 21st day of disease, when, while using the bed-pan, she had a slight hæmorrhage. During the next three hours patient passed some clots and fluid blood several times, amounting in all to about twenty-five ounces. Patient's condition became rapidly worse, pulse imperceptible at wrist, and the extremities cold and clammy. The following morning she had another hæmorrhage of about eleven ounces, and in spite of everything gradually sank and died at nine p.m.

A post-mortem was held thirty-six hours after death, and the ulceration of the intestine and lymphatic hyperplasia found to be very slight in amount and virulence. The site of the hæmorrhage was not determined. There was marked fatty degeneration of the heart muscle. The Widal reaction was never given. Cause of death—Typhoid with hæmorrhages.

7. D. H., age 23, carpenter, admitted August 12th, on the eighth day of disease, complaining of headache, backache and general weakness. On admission, patient, a well nourished young man, face flushed, tongue coated and tremulous; mind clear. Temperature, 103°; pulse, 96; respiration, 20. Pulse slightly dicrotic, some rose spots visible on skin, spleen not palpable. Lucocytes, 8,000. Widal reaction positive.

Three days after admission patient first complained of abdominal pain. Examination showed some distention and tenderness. The following day he vomited four times, and distention continued. The pulse and temperature remained unchanged. Leucocytes, 8,600. Patient continued to have a certain amount of distention, but no other untoward symptoms. On the 27th day of disease a friend gave him an orange, and he disposed of most of it. The following night he complained of some abdominal pain, and by the next morning this had

become severe. Examination showed tenderness over the lower portion of abdomen, but no rigidity. One and a half hours later the pain was very severe, and abdomen was quite tender and rigid all over; leucocytes, 9,333. The abdomen was opened two hours later, and a perforation low down in the sigmoid flexure found. There was much free fluid in abdomen. Patient died early the following morning on the thirtieth day of disease.

A post-mortem showed acute purulent peritonitis and ulceration in the ileum colon, sigmoid and rectum. The large intestine was more severely attacked than smaller. There was a half turn in the sigmoid, which had evidently helped to increase the distention of this portion of bowel.

8. J. R., age 25, clerk, admitted August 20th, on the sixth day of disease, complaining of headache and weakness. On admission, patient a muscular young man; mind clear. Temperature, 102°; pulse, 100; respirations, 22.

Complains of severe pain on swallowing; pharynx on examination is reddened. Abdomen is not distended, some rose spots over surface, spleen not palpable, leucocytes, 6,900. Two days later spleen became palpable and Ehrlich's reaction positive, and a culture taken from throat showed almost a pure culture of Klebs-Loffloer bacilli.

Temperature ran high in spite of tub baths, and pulse became more rapid, soft and dicrotic. Delirium developed and became almost continuous, with cyanosis and involuntary stools and micturition. On the fifteenth day of disease the patient died. The Widal reaction was given the day before.

A post-mortem was held thirteen hours after death, and showed typhoidal ulceration of the small intestine, and all the organs showed the signs of extreme toxicity. The brain showed acute softening of the left tempero-sphenoidal lobe. Death due to toxæmia.

9. H. C., age 25, tailor, admitted August 24th, on the fifteenth day of disease, complaining of general weakness, pain in the abdomen, and loss of appetite.

On admission, patient was a well nourished young man. Skin and mucous membranes a good colour, tongue coated. Temperature, 103.4°; pulse, 118; respirations, 30. The abdomen was prominent, and covered with a thick layer of pannicalus. There was no tenderness or rigidity. The spleen was not palpable. The disease ran an ordinary course, temperature rising to between 103° to 104° daily, pulse ranging in the vicinity of 120°, and patient appearing rather toxic. Rose spots appeared about a week after admission, and Widal reaction was given on the nineteenth day of disease.

On the twenty-sixth day, patient had a slight hæmorrhage and another the following day. Patient's general condition continued fairly good, but was still rather toxic. Eight days later, on the thirty-fifth day of disease, he had a slight hæmorrhage about eight a.m., followed later in the morning by two large ones. The patient sank into a state of collapse, and died about one p.m. No post-mortem was held. Typhoid fever with hæmorrhages.

The following two cases are of interest:—

1. D. M., artist, age 31, admitted April 14th, on the twelfth day of disease, complaining of weakness and loss of appetite. On admission, patient was a pale, poorly nourished young man; expression animated, mind clear. Temperature, 97°; pulse, 72; respirations, 20.

Respiratory and circulatory systems negative. Over chest and abdomen many rose spots were visible, and spleen was easily felt. The locomotor and nervous systems were negative. Urinalysis showed the urine to be normal; Ehrlich's reaction negative. On the evening of admission, the temperature rose to 102°, and he continued to have fever of a rather irregular intermittent type for about two weeks. The pulse rate was slightly increased. He remained in the hospital thirty days, and was then discharged cured. The Widal reaction was tried repeatedly, but was never positive. A diagnosis of typhoid fever, however, was made. On May 30th, sixteen days after patient had been discharged, he was readmitted, complaining of headache, weakness, loss of appetite and thirst, which symptoms he had had for a week. On admission patient did not look ill; face flushed, mental state clear. Temperature, 102°; pulse, 112; respirations, 24. Respiratory and circulatory systems were negative. The bowels were regular; there was no distention or abdominal pain. No rose spots visible. Spleen felt enlarged as before. The urine showed some albumen, blood cells and blood casts, and the Ehrlich reaction was strongly positive.

Five days after admission, on the twelfth day of his second illness, patient gave the Widal reaction. Patient remained in the hospital six weeks. He had some irregular fever for the first two weeks, and his urinary condition gradually improved. He was discharged cured on the fifty-second day of his second illness. Diagnosis—Typhoid fever with relapse.

A. M., clerk, age 23, admitted July 2nd, on the sixteenth day of disease, complaining of pain in abdomen, diarrhœa and general weakness.

Personal History.—Patient said he had had typhoid fever in January, 1904, which had confined him to bed for eleven weeks.

On admission, patient fairly well nourished, face flushed, lips dry; expression dull, intelligence good. Temperature, 102.1°; pulse, 108; respirations, 24. Abdomen showed no distention, and numerous rose spots over surface. Spleen palpable. Ehrlich's reaction positive. The Widal reaction was given on the eighteenth day of disease and leucocytes 5,200 on the day after admission. Temperature ran a moderately high course; pulse slightly increased in rate, soft but not aicrotic.

On the morning of July 6th there was some fulness of abdomen, but no tympanites or pain. At six p.m. patient was seized with sudden pain in the abdomen. The bowels moved after the pain appeared, and caused him considerable pain. The pain continued, but he did not report it to the nurse till six-forty-five p.m. When seen immediately after, the pulse was rapid, expression anxious. An examination of the abdomen showed tenderness on pressure most marked on the right side. There was no rigidity. A deep breath caused pain, and there was limited abdominal movement on respiration; leucocyte count, 8,400. At nine p.m. there was slight fulness over right upper quadrant of abdomen. The pulse was becoming more rapid and respirations more thoracic in character. Tenderness over abdomen as before, but very little resistance and no rigidity. Leucocyte count, 10,000. At eleven p.m. patient was taken to the operating room.

Under ether the abdomen was opened by a median incision, and a perforation of the ileum was found about ten inches above the ileo caecal valve, with early peritonitis. The perforation was closed and the abdomen flushed out, and a tube and gauze inserted. Patient made an uneventful recovery, and was discharged cured on August 30th.

The first official publication made by the Council on Pharmacy and Chemistry appears in *The Journal A. M. A.*, May 27. A sub-committee has purchased in the open market original sealed packages of various proprietary and patent remedies containing acetanilid—some of them represented to be chemical compounds, and publishes results of its examination of them as follows:—Ammonol—Acetanilid, 50; sodium bicarb., 25; ammonium carb., 20. Antikamnia—Acetanilid, 68; caffein, 5; citric acid, 5; sodium bicarb., 20. Koehler's headache powders—Acetanilid, 76; caffein, 22. Orangeine—Acetanilid, 43; sodium bicarb., 20; caffein, 10. Phenalgin—Acetanilid, 57; sodium bicarb., 29; ammonium carb., 10. Salacetin—Acetanilid, 43; sodium bicarb., 21; sodium salicylate, 20.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

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Remittances, advertisements or business communications are to be addressed to the Montreal Medical Journal Co., Box 273; all others to the Managing Editor, 216 Peel Street, Montreal. All communications intended for insertion in this Journal are received with the understanding that they are contributed exclusively to this Journal. A limited number of reprints of articles will be furnished to authors at cost price, if a request to that effect accompany the manuscript.

VOL. XXXIV. JULY, 1905. No. 7.

TWO CONVOCATIONS.

The annual convocation of McGill University for conferring degrees in the Faculty of Medicine was held on the 9th of June. A similar meeting of the University of Bishop's College was held on the 31st of May. That makes two. Next year there will be but one, for Bishop's College has formally surrendered its right to teach medicine for fifteen years at least.

Upon another occasion we referred to the nature of the arrangement which was under consideration. That surmise has proved in the main to be correct, and the terms are now a matter of common knowledge.

We shall speak first of the earlier convocation. More than ordinary interest was attached to it, as the last of a series of annual ceremonies which have been held for the last 34 years, and from the fact that it afforded the first public opportunity for an expression of the sentiment of the University upon the amalgamation of the Medical Faculty with that of McGill. Therefore, the utterances of Chancellor Hamilton, Principal

Whitney and Vice-Dean McConnell on the one hand, and Dean Roddick, representing McGill University, were full of interest.

Dr. McConnell gave a short history of the events which led to the formation of the Faculty in 1871, and indicated its course and aim since that time. He gave expression to the natural regret which all experienced at the separation from the University of Lennoxville, with which their relations had been most cordial, but, with his colleagues, he agreed that the step which had been taken was in the best interests of the medical profession.

Dean Roddick spoke with that warmth of feeling which is habitual to him of the relations which existed amongst the authorities at McGill towards Bishop's, and more especially towards the members of the Medical Faculty. The amalgamation of the Faculties, he said, marked an epoch in the histories of both universities, and in that of the education of the province. It was true, he admitted, that the amalgamation of the Faculties meant the absorption of one, but this was bound to strengthen medical education in the province and in the country at large.

One other subject was common to all the speeches, the recent death of Dr. F. W. Campbell, Dean of the Medical Faculty of Bishop's College since 1882. As Principal Whitney remarked, "for many years, not only to the authorities of the university, but also to the outside public, that Faculty meant Dr. Campbell." After such fitting reference, he commented upon the unselfishness which had characterized the members of the Medical Faculty of Bishop's throughout the negotiations leading to the amalgamation. By diverting the negotiations into another channel they might have made arrangements better for themselves, but worse for the undergraduates, the graduates and the medical profession in general. The amalgamation had not been undertaken because the Faculty could not carry on its work. But the retirement of Dr. Campbell had brought them to the parting of the ways, and either it was necessary that the Faculty be re-organized or that it cease to exist as a separate body. Re-organization would have perpetuated a division in the medical profession. The amalgamation, on the other hand, would result in great development in medical education, and it would rally the strength of two important bodies in one centre. The medical students of Bishop's had been most loyal sons to their alma mater, and in their new allegiance he was confident that they would display the same loyalty and devotion to McGill.

The seventy-sixth convocation of McGill University, which was held in the hall of the Royal Victoria College, was also notable in several regards, especially as it represented the first official gathering at which

Bishop's College signified its new relationship, and that it marked the existence of the Faculty of Medicine as an integral part of McGill University in the fullest sense. Both of these happy consummations were referred to in the speeches which were made by Principal Peterson, Dean Roddick and Dr. Craik. Nine members of the Faculty of Medicine of Bishop's College were admitted to the degree of M.D., C.M., and seventy-three members of the graduating class were awarded degrees.

Dean Roddick referred to the material prosperity of the College in its support from all parts of Canada, and made special reference to the beginnings which have been made in the dental department. He spoke briefly of the amalgamation with the Medical Faculty of Bishop's College, and praised the spirit which had been shown by both colleges in the course of the negotiations. Reference was also made to the great advantages that will be derived from the existence of the new Maternity Hospital, and the Alexandra Hospital for Contagious Diseases, and, finally, to the question of Dominion registration.

Dr. Craik spoke upon the needs of proper housing for medical as for other students of the university, emphasizing the fact that hitherto the University has not been able to do anything towards this extremely important factor in university life. This is a large problem, and it was fitting that it should be here referred to. The public who attend university functions are all the better for knowing the difficulties that beset a college, and the college faculty and students are not the worse for being reminded of them. There is much to be done towards solving such questions as residences, fuller clinical knowledge on the part of students, greater use of the hospitals, more rigorous matriculation examinations—in fact everything that is meant by the motto, "grandescunt." That this convocation has marked so much material progress is a sign that the Medical Faculty of McGill must call upon itself for yet more.

ENLARGEMENT OF THE BORDERS.

The London *Lancet* of June 3rd gives the place of honour to a discourse in French, which occupies nearly five columns. It is entitled "Discours sur les Conditions Générales des Etudes Médicales et de l'Assistance Publique à Paris, à Propos du Voyage des Médecins Britanniques," and the author is Dr. Lucas-Championière, surgeon of the Hôtel-Dieu.

The significance of the address lies not so much in what it contains as in the language in which it is printed; and, to print it so is a stroke of intelligence. The most which foreigners expect from Englishmen

is an amused toleration of the absurdities which they witness abroad. That they should betray any interest in their new surroundings or any comprehension of them, or any desire to understand them, would be to admit a refinement of intelligence, of which foreigners regard Englishmen as being incapable. All this, of course, is based upon improper knowledge, and Dr. Lucas-Championière cannot conceal the astonishment which he felt upon learning that many of the visitors spoke the language of the country. He appears to have the impression that all Englishmen know how to speak French; but, like the sacred monkeys of Benares, being wise, they do not attempt to do so. He is frankly amazed at the gift of tongues which is possessed by Dr. Kingston Fowler and Dr. Augustus Waller, and finds them "remarquable par la facilité de leur élocution, par la perfection de leur langage et par la très juste et vraiement éloquente appréciation de l'oeuvre de notre grand Pasteur." Dr. Waller created something of the same impression when he spoke at Laval University during the meeting of the British Medical Association in Montreal in 1897, and we are glad to learn from so high an authority of his remarkable progress in the French language.

This discourse is valuable in itself as showing the difference between the methods of medical study which prevail in England and in France. In Great Britain—We are now following the *Lancet's* interpretation—individual effort is everywhere free and encouraged; in France the municipality or the State hinders the development of individual effort. In France the pupils at secondary schools are closely supervised; in Great Britain the boys at public schools have but little supervision. But when a French scholar enters upon his career as a medical student he becomes practically his own master. Attached to the Paris Faculty of Medicine are some 6,000 students, any one of whom can work just as much or as little as he likes. He is not tied to one hospital, but can attend any or all of the Paris hospitals, and he follows the teaching of any member of the staff of the hospitals as he pleases. In Great Britain the student is practically tied to one hospital, and is a pupil of the staff of that particular institution. In Great Britain the hospitals are autonomous institutions, while in France they are municipal or Government institutions. In Paris they are all under the Assistance Publique, an organization which may be roughly compared with boards of guardians, Local Government Board, and Metropolitan Asylums Board. All the Paris hospitals are under its control, as well as nearly all other charitable institutions. Its annual budget amounts to 45,000,000 francs, and it obtains its funds from certain endowments, from sundry taxes which it has the right to levy, and from a sum voted annually by the city of

Paris. Owing to anyone who is poor and in want having a right to hospital accommodation, the Paris hospitals are often much overcrowded.

We find further evidence in the *British Medical Journal* of even date, that the parochial and national boundaries of medicine have broken down, that Chauvinism, as Dr. Osler terms the narrow intolerant spirit, is passing away. Save for ten pages of comment upon purely local events, and 136 pages of advertisements, the whole Number is given up to a consideration of the medical profession abroad in its educational, social and economic aspects. This diffusion of knowledge must tend toward co-ordination of effort and community of feeling in which the lesser prejudices will be ultimately lost. The reader is warned that North America does not fall within the purview of the Number, and yet we find an admirable survey of the conditions which prevail in Canada by Malcolm Mackay, which extends to ten columns in length. Territorially at least, Canada is a not inconsiderable portion of that continent. With singular impartiality, an insert of four pages in praise of the *Practitioner* is admitted into the body of this Number, a journal which in its June issue indulges in some tolerably plain speaking about the British Medical Association. It says, "as conducted by its present wire-pullers, that body is a trade union naked and unashamed, and as such it represents the least noble elements in our noble profession." At this distance, and with our imperfect knowledge, we do not feel qualified to contradict the statement, but that does not prevent us from expressing the opinion that it goes beyond the facts. Certainly, there was no evidence of this spirit in the Association when it met in Montreal.

CANADIAN MEDICAL ASSOCIATION.

The thirty-eighth annual meeting of the Canadian Medical Association will be held in Halifax August 22nd to 25th, both days inclusive. From the nature of the correspondence which is being received, there is promise that this meeting will rival in importance the great gathering which was held in Montreal in 1897. We are requested by the Secretary to intimate that physicians who propose attending the meeting should communicate at once with the Chairman of the Information and Lodging Bureau, Dr. C. Dickie Murray, 66 Queen Street, Halifax, in order to secure adequate hotel accommodation. The rates will range between a dollar and a half and three dollars a day. The Secretary of the Committee of Arrangements is Dr. J. R. Corston, 111 Gottingen Street, Halifax.

The union of small medical schools under one management promises to be the feature of progress in the immediate future. Arrangements

have been made for the consolidation of the Kansas City Medical College, the Medico-Chirurgical College of Kansas City, and the College of Physicians and Surgeons of Kansas City. These schools will be merged and a faculty chosen which will become the medical department of the University of Kansas. In St. Joseph, the Ensworth Medical College and the Central Medical College have combined, the institution retaining the name of Ensworth Medical College.

The Ontario Government has provided for a contribution of $300,000 to bring about closer relations between the Medical Faculty of Toronto University and the Toronto General Hospital. Included in that general object is the replacing of the present hospital buildings by others of modern construction and equipment. To aid the enterprise the city will probably vote $200,000. A site that commends itself to the trustees from every point of view is the area lying between University Avenue and the Dental College, running south from its College Street frontage to Chestnut Street. Located on this block, the hospital buildings would be most convenient to the Medical School.

As a result of the discussion aroused by the paper read by Dr. C. A. Hodgetts, Secretary to the Board of Health, before the Ontario Medical Association, in which he sets forth "A Plea for a Provincial Miniser of Health," a resolution to that effect was unanimously adopted, and an advisory committee was appointed to wait on the Premier and cabinet to discuss the matter in all its bearings.

The *Brooklyn Medical Journal* for June contains as a supplement a classified list of the Sanatoria of the New England and Middle States. Many valuable particulars of each are given, and the list will be valuable for reference.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

The nineteenth annual meeting of this Association was held in the Windsor Hotel, Montreal, on the 13th and 14th of June, 1905, under the presidency of Dr. E. C. Burnett, of St. Louis, Mo. There were between twenty-five and thirty members of the Association present (the membership is limited to 50).

On the afternoon of Tuesday, the first day of the meeting, the members were received by Dr. Hingston at the Hotel Dieu and shown over

the Institution. Later in the day there were shown over the Royal Victoria Hospital by Dr. Bell and other members of the staff of the Hospital. In the evening they were entertained to dinner at the Hunt Club by Sir William Hingston and Dr. James Bell, the Montreal members of the Association.

The papers read at the meeting were of a very high order and were fully discussed by the members present. As will be seen by the programme, in the morning work of the first day a paper was read by Dr. Watson, of Boston, on certain aspects in the subject of bladder tumours, with special reference to operative treatment. Dr. Watson, in the course of his paper, made the suggestion that as a preliminary to removal of the bladder a double nephrostomy should be established, and mentioned a case which had been under his observation and that of Dr. Thorndyke for a number of years with a double nephrostomy, in which the man was in excellent health and made very comfortable by an apparatus worn upon the loins to collect the urine and was able to continue his work. In the programme of papers for the second day, the subjects referred to and discussed were mainly malignant disease of the bladder and cases of nephrolithiasis. Many specimens were shown both of tumours and of calculi removed from the kidney and bladder. On the morning of the first day a very unusual foreign body removed from the bladder by Dr. Van der Poel, of New York, was exhibited. The meeting was altogether of exceptional interest and the papers were discussed with much enthusiasm.

The following is a list of the papers which were read:—

Reflex Irritations from Lesions in the Male Urethra. L. Bolton Bangs, M.D. (New York).

Case of Extravasation of Urine, due to Phimosis; Retention of Urine, due to Foreign Body in the Bladder, of uncertain origin; Case of Unusual Foreign Body in the Bladder. John Van der Poel, M.D. (New York).

Abscesses involving the Perinaeum; Causes and Treatment. S. Alexander, M.D. (New York).

The Comparative Pathology of X-Ray Sterility. F. Tilden Brown, M.D. (New York).

Some Cases of Incompetence of the Bladder in young men. James Bell, M.D. (Montreal).

Rupture of the Male Urinary Bladder; Account of three cases. Orville Horwitz, M.D. (Philadelphia).

Certain Aspects of the Subject of Bladder Tumours, with special reference to Operative Treatment. Francis S. Watson, M.D. (Boston).

The Visual Examination of the Urethra and Bladder. Wm. K. Otis, M.D. (New York).

Case of Papilloma of the Bladder; Supra-pubic Cystotomy. Alfred C. Wood, M.D. (Philadelphia).

Report on Cases of Malignant Tumours of the Bladder. Harvey G. Mudd, M.D. (St. Louis).

Graduated Tunneled Sounds for rapid Stricture Dilatation and Guides in External Urethrotomy. John Van der Poel, M.D. (New York).

A Combined Shoulder, Yoke, and Leg Crutch in Perineal Prostatectomy. F. Tilden Brown, M.D. (New York).

Sarcoma of the Prostate. Chas. L. Gigson, M.D. (New York).

Carcinoma of the Prostate; Report of three cases treated by Perineal excision of the entire Prostate, Seminal Vesicles, and Suture of a Cuff of the Bladder to the Membranous Urethra. Hugh H. Young, M.D. (Baltimore).

An attempt to utilize the Electric Conductivity of the Urine for Clinical Purposes. Louis E. Schmidt, M.D. (Chicago).

Presentation of Specimens of Urinary Calculi. Bransford Lewis, M.D. (St. Louis).

Case of Marked Renal Lithiasis in which 80 Calculi were removed. Supra-pubic Prostatectomy. Alfred C. Wood, M.D. (Philadelphia).

The Etiology of Hypernephroma. Causes of death in two cases. F. Tilden Brown, M.D. (New York).

Cases illustrating points in the Operative Treatment of Stone in the Kidney. Paul Thorndike, M.D. (Boston).

Kidney showing Repair after Nephro-lithotomy. Chas. L. Gibson, M.D. (New York).

Reviews and Notices of Books.

THE VERMIFORM APPENDIX AND ITS DISEASES. By HOWARD A. KELLY, A.B., M.D., and E. HURDON, M.D., with 399 original illustrations, some in colours, and three lithographic plates. Philadelphia and London. W. B. Saunders & Co., 1905., pp. 827. Toronto. J. A. Carveth & Co.

This is truly a monumental work and must have taken much money, time and brains. There is nothing left for any one else to say about the appendix. The illustrations are magnificent and profuse. The anatomical chapters, written by Mr. Broedel, and illustrated chiefly by his wife, are very good and most valuable. Many workers have helped the authors in the preparation of this huge work, and many surgeons have placed their material at Dr. Kelly's disposal. The book com-

mences with three chapters on the history of appendicitis. The first surgeon, according to the authors, who made the diagnosis of appendicitis, and operated deliberately for this affection, was Krönlein, in February, of 1884; the case was published in 1886. In this connexion, a clinical lecture on inflammation and perforation of the appendix vermiformis, by the late Dr. R. P. Howard, is referred to. This was delivered in 1858. The anatomy—embryological and comparative—and the many forms and anomalies are fully described and illustrated, and the various peritoneal folds and fossæ are fully described, and also most beautifully illustrated. The most common position of the appendix is often pre-cæcal, which, in disease, would mean danger to the patient. The structure of the appendix is carefully worked out, and profusely illustrated. The arteries, veins, and lymphatics of the appendix, and the nerves, take up a chapter of 45 pages, beautifully and profusely illustrated.

In the chapter on the physiology, the function of the appendix is discussed—whether or no it is of any use, and has a special function, or has nothing more than a small share in the general intestinal system. This is very shortly discussed, and no conclusion is arrived at. The appendix is rich in lymphoid tissue, and is said to be closely related to the tonsil. Has it an influence on the system, such as the thyroid, thymus, suprarenals? This is difficult to believe, for it has been removed innumerable times in the living subjects without any evil results. Sir Wm. Macewen's views on this subject are not referred to; no doubt they appeared too late.

The natural history of the appendix is next considered, and then the post mortem appearances of acute appendicitis, and its complications, and influence on other organs, such as the liver, is thoroughly discussed, statistically and otherwise. A beautifully illustrated case of liver abscess, originating in the appendix, is supplied by Dr. J. G. Adami, of McGill University. The bacteriology occupies a chapter, followed by four chapters on the pathology of the appendix, most marvellously illustrated by many coloured and other plates.

The etiology, clinical history and diagnosis, is next considered, each having a separate chapter. Then comes a chapter on appendicitis in typhoid fever, and next, appendicitis in the child. It is stated that Betz, in 1870, first published a paper on ileus due to appendicitis in a child; but Professor A. H. Holmes, in the *British American Journal of Medical Science,* in 1847, published a paper on appendicitis, in which he relates a case of peritonitis due to perforation of the appendix in a child 20 months old, and also gives a coloured plate showing the gangrenous state of the appendix.

Typhlitis is noticed in a chapter, and cases are mentioned where the cæcum was involved, being inflamed or ulcerated and the appendix normal.

We now come to the most important chapters on treatment. First, there is a chapter on the general considerations regarding operations; next, preliminaries to operations. Then comes the considerations on incisions, which have a whole chapter to themselves, and a plate in illustration is shown of this region which looks more hacked up than any St. Sebastian; but the mutilation is confined to the right side of the median line. Sixty pages are devoted to an account of the removal of the appendix. This chapter is magnificently and richly illustrated. Almost every known method is described, simple and complicated, but no one method is recommended. In this chapter is an interesting cut (Fig. 259), entitled "A collective picture, showing the various points of attachment of the vermiform appendix to the gall bladder, kidney, abdominal wall, ileum, uterus and adnexa, sigmoid flexure, bladder and a hernial sac." When to operate is considered, and also the intermediate operation. It is stated that the ideal time for operation in acute appendicitis is within the first few hours, and not later than 24; but for this ideal a good surgeon must be available. If a good surgeon cannot be obtained, then it is better to take the chances of spontaneous cure. The most desperate cases sometimes recover, and in these cases, say the authors, the only contra-indication to operation is the certainty of approaching death, and we agree with this.

Chapter XXVI. treats of abscess in the neighbourhood of the appendix and many interesting cases are narrated. In abscess cases the practice of always removing the appendix is condemned; if it can be removed easily, without too great disturbance of parts, then, of course, its removal is advised. Subphrenic abscess is described and illustrated. In diffuse, purulent peritonitis the affection may seem general, yet not involve by any means the whole peritoneum. J. M. Burckhardt proposes the term "progressive" for these cases. The term "diffused peritonitis" is used in contra distinction to "circumscribed," limited to the right iliac fossa. We agree altogether with the statement that if streptococci are found the prognosis is far more serious than in a more extensive colon bacillus infection, even though the disease is limited in its area. We heartily agree with the authors when they condemn the practice of some surgeons in getting the patients up too soon after the operation. The "up in eight days" patient, often weeks afterwards, is still unfit for work. The after treatment is practical and to the point, and the sequelæ are fully discussed.

Two chapters are taken up with the relation of appendicitis to

gynæcological affections to pregnancy, labour, and the puerperium. There is also a chapter on benign and malignant tumours of the appendix, and another on tuberculosis, actinomycosis, and amœbic dysentery of this troublesome appendage. Also methods of operating for the removal of ileo-cæcal tumours are described. Finally, we have a chapter on the medico-legal aspects of appendicitis.

From this analysis of the book, it will be seen that the work is encyclopædic. No amount of expense or pains has been spared on its preparation, and one is rather staggered by the amount of material that has been collected, and the enormous literature on such a small part of the anatomy. Of course, the book can only be used as a work of reference; but any one who can delve in this mine will find much pleasure—and treasure also. F.J.S.

A Manual of Practical Hygiene. By Charles Harrington, M.D., Assistant Professor of Hygiene, Medical School of Harvard University. Fourth Edition. Philadelphia: Lea Brothers & Co. 1905.

The latest edition of this work is decidedly a gain to the student of public health. Reversing the usual order of things, we may summarize at the commencement in a very few words, by saying that this book is by far the best of its kind published on this continent, and in this the last edition the subject matter has been brought up to date; at the same time the chapter on immunity, etc., fills in a gap which has hitherto been greatly needed.

Criticising in detail the different sections of the work, it must be noted that the chapter on foodstuffs, etc., is particularly full, supplying all the facts required by any student, but this exhaustive treatment of the subject rather overshadows the other sections of the work, e.g., the chapter dealing with ventilation. Another praiseworthy point in the chapter on "Soils." It is pleasing to see such an important subject receiving a good measure of attention from the author, for in most text-books on Public Health the question of "soils, etc.," is usually disposed of so briefly as to amount almost to a cypher. In the chapter dealing with water supplies, a slight re-arrangement would be welcomed by the student; the primary division or classification of water into rain, surface and ground-waters, is made, each receiving a certain amount of description; then after a skip of ten or twelve pages, devoted to practical analyses, it is taken up again, and "finished off" so to speak, which is perhaps a trifle confusing.

Lastly, in dealing with vital statistics, fuller details with reference to the computation of various items, e.g., census, life tables, etc., would

bring this chapter more in keeping with the excellent standard of the other important sections. The remaining portions are all stamped with the mark of excellent work and thoroughness in the treatment of the various subjects; and, with the suggested additions and alterations, nothing could better meet the requirements of the student seeking knowledge either as undergraduate or as post-graduate entering for higher degrees.

A Text-Book of Medical Chemistry and Toxicology. By James W. Holland, A.M., M.D., Professor of Medical Chemistry and Toxicology and Dean of the Jefferson Medical College, Philadelphia. In one volume of 592 pp., fully illustrated. Cloth, $3.00 net. W. B. Saunders & Co., Philadelphia; J. A. Carveth & Co., Toronto.

This volume is divided into four parts:—Physics—Under which is considered matter and force, meterology, heat, magnetism and electricity and light. Inorganic Chemistry—Consideration of all the metallic, non-metallic elements and chemical compound used in medicine. Organic Chemistry—Study of organic formulas and ultimate analysis The carbohydrates are divided into monosaccharids, disaccharids and polysaccharids: short chapter on ptomains and toxins, albumins or proteid matter, ferments or enzymes. Physical and Clinical Chemistry —Under this heading are considered digestion (saliva, gastric contents, pancreatic juice, bile and intestinal juice), blood, milk and urine. This last section might have been enlarged to advantage.

The author has endeavoured to connect the chemical and therapeutical value of the various chemical compounds, so that the student will be made to feel that chemistry is of practical value to him in the study of medicine. We should like to draw special attention to colour plate No. 3, "phenylhydrazin test for sugars." Until recently students have been taught that the phenylhydrazin test was only used for glucose, but the author shows in a beautifully coloured chart the difference between phenylglucosazone, phenylmaltosazone and phenylactosazone crystals. The book is original in many ways, and will be found valuable to students and practitioners.

The Doctor's Recreation Series: The Doctor's Window, Poems by the Doctor, for the Doctor, and about the Doctor. Edited by Ina Russelle Warren. The Saalfield Publishing Co., Chicago, Akron, New York. 1904.

The anthologist's is not quite the *dilettante* business for which it is too often and ignorantly derided. The reader in his own pleasure forgets, and should forget, the Editor's labour, but the labour is none the

less real, however pleasant it may have been. To make the access to the muses easier when, in the hour of need, they are required to uplift and console is a useful office. Upon four previous occasions we were permitted to call attention to this series of books, which is intended for the recreation of physicians, by gratifying their interest in literature in so far as it pertains to medicine. The present is volume five, and it contains 133 pieces of verse by 115 authors, which deal with some aspect of the profession. The ground which is covered extends from Geoffrey Chaucer to William Henry Drummond, from the "Canterbury Tales" to the "Habitant." In so great a field we must not complain if there are tares in the wheat. Certainly the editor has allowed both to grow together with singular impartiality. If only the good had been retained, the book would have been much smaller. Yet, Sydney Dobell, Austin Dobson, Samuel Garth, W. E. Henley, Ben Jonson, Frederick Locker-Lampson, Matthew Prior are all here, beside the sweet singers of the annual dinners, of the convocations and the college journals. Henley's "In Hospital," 29 pieces, is there in its entirety, and one cannot but hope that the conventions of copyright are observed. Those who are fond of bad poetry, by reading this book, will be compelled to read much which is good; but even bad poetry is better than none—it suggests that there is such a thing as poetry in the world and in the profession of medicine.

ARNEILL'S EPITOME OF CLINICAL DIAGNOSIS AND URANALYSIS. A Manual for Students and Practitioners. By JAMES R. ARNEILL, A.B., M.D., Professor of Medicine and Clinical Medicine in the University of Colorado. 244 pages, with 79 engravings and a coloured plate. Cloth, $1.00, net. Lea Brothers & Co., Philadelphia and New York, 1905.

This is the seventeenth of the large series of 22 Epitomes, from the editorship of Dr. Pedersen; it is a compend of the work of blood and urinary examination, as well as that of sputum, fæces, stomach contents, cerebro-spinal fluid, milk, etc., and it is compressed into small space, printed upon thin paper, and there is certainly a remarkably large amount of information in a volume not more than half an inch thick. It appears to be a book that can be heartily recommended to students or any who have much work in a clinical laboratory; it certainly has the virtue of terse and concise statement. The present writer has not seen a book on this subject which adheres so closely to the practical side of the subject, and takes so great care to guard against the introduction of too many words; the result is that any experiment or piece of clinical examination undertaken, could scarcely be misunder-

stood by the densest reader, and the different steps in a procedure are paragraphed, so that the whole process has a sequence that will go far to make it clear in the mind of one who performs it for the first time.

DISEASES OF METABALISM AND NUTRITION. VON NOORDEN, Part VI.—Drink Restriction (Thirst Cures), particularly in Obesity, by Prof. CARL VON NOORDEN and DR. HUGO SALOMON. New York, E. B. Treat & Company, 1905. pp. 86.

After reading this book one is left with a very definite impression, namely, that the most necessary part of a treatment of obesity is restriction of fluids, especially at times when food is taken. Further, there is a great need to lessen the work of the heart in cardiac disorders by restricting the amount of fluid ingested. The first part of the book contains the history of the idea, which, it will be gathered, is by no means new; following this, the physiology of the effects of thirst is discussed, and, finally, in a summary, the author states that he believes drink restriction necessary in cardio-vascular diseases, diseases of the stomach and kidneys, where high blood pressure is undesirable, in obesity, in chlorosis, in some cases of cirrhosis of the liver, and in hæmorrhage. The author is moderate in his statements, when one considers that he is keenly promulgating doctrines that are not universally believed, and that he is speaking of a subject where investigation has not had great space, and where personal opinion has hitherto reigned. The translation is under the supervision of Boardman Reed, M.D.

A TREATISE ON ACUTE CONTAGIOUS DISEASES. By WILLIAM M. WELCH, M.D., Consulting Physician to the Municipal Hospital for Contagious and Infectious Diseases; Diagnostician to the Bureau of Health, etc., Philadelphia, and JAY F. SCHAMBERG, A.B., M.D., Professor of Dermatology and of infectious Eruptive Diseases, Philadelphia Polyclinic; Consulting Physician to the Municipal Hospital for Contagious and Infectious Diseases, and Assistant Diagnostician to the Philadelphia Bureau of Health, etc. Octavo volume of 781 pages, illustrated with 109 engravings and 61 full-page plates. Cloth, $5.00, net. Lea Brothers & Co., publishers, Philadelphia and New York, 1905.

Probably no two persons are better qualified by reason of wide experience to write a book upon contagious diseases than Dr. Welch and Dr. Schamberg, and no publishers more liberal in the use of illustrations than Messrs. Lea. The plates are the glory of the work, though we have nothing but praise for the text. The discussion of small-pox is nothing short of masterly. This book is likely to be the standard for a long time to come.

MATERNITAS. By CHARLES E. PADDOCK, M.D., Professor of Obstetrics, Chicago Post-Graduate Medical School. Cloyd J. Head & Co., Chicago.

This book of less than 200 pages is intended to aid the prospective mother during the period of pregnancy, and, in so far as we understand the matter, the advice appears to be sound. Many of the illustrations are fetching, but they suggest our early studies in *Harper's Bazaar* and the *Delineator,* and in other places a catalogue of furniture. We can testify to the truth of one observation at least, "that the ideas of the nurse may not correspond with those of the family" which employs her. It is questionable if books of this class, which are intended for mothers, prospective or otherwise, do more than minister to their curiosity.

THE FOUR EPOCHS OF WOMAN'S LIFE. Second Edition. By ANNA M. GALBRAITH, M.D. With Introductory Note by JOHN H. MUSSER, M.D. 247 pages. W. B. Saunders & Company. Cloth, $1.50 net.

This work is written for the instruction of the laity, and the fact that a second edition has been demanded in such a short time is sufficient proof of its need. The language is clear and comprehensive, yet modest. As a further aid a comprehensive glossary of medical terms has been appended. In this new edition the author has made some additions, namely, a section on "The Hygiene of Puberty"; one on "Hemorrhage at the Menopause a Significant Symptom of Cancer"; and one on "The Hygiene of the Menopause."

Medical News.

McGILL MEDICAL FACULTY.

The seventy-sixth convocation of McGill University for conferring degrees in the Faculty of Medicine was held on June 9th, 1905. The following is the list of names of those who secured the degrees of M.D.

Alguire, A. R., Cornwall; Briggs, J. A., New Westminster; Brown, F. F., Cornwall; Burgess, H. C., Sheffield Mills, N.S.; Chisholm, H. A., B.A., Lindwood, N.S.; Connor, E. L., Berlin; Costello, W. J. W., B.A., Montreal; Covernton, C. F., Montreal; Cumming, A., B.A., Scottsburg, N.S.; Dougan, B. H., Hampstead, N.B.; Dowler, W. H., Billings Bridge, Ont.; Dykes, W., Nanaimo, B.C.; Finigan, J. F., Oshawa, Ont.; Geddes, R. W., B.A., Deseronto; Gillis, J. H., Metapedia; Grimmer, R. D., St. Andrews, N.B.; Hannington, J. W. R., Victoria; Heagerty, J. J., Montreal; Henderson, E. H., B.A., Franklin Centre; Henry, E. G., B.A.,

Lennoxville; Hume, G. M., Leeds Village; King, S. S., Albert, N.B.; Leslie, H. A., Souris, P.E.I.; Likely, D. S., B.A., St. John, N.B.; Loggei, W. S. Chatham, N.B.; McDermott, J. H., Gordontown, Jamaica; McKay, M. E., Whycocomagh, N.S.; McLean, J. D., Beaton's Mills, P.E.I.; McDonald, J. A., B.A., Valleyfield; McDonald, J. C., Peak's Station, P.E.I.; McIntosh, G. J., Dalkeith; McLeod, W. A., Finch; McMicking, A. E. T., Victoria; McMurtry, S. O., B.A., Montreal; McMurthy, W. C., Port Hope; McNaughton, W. B., St. Raphael West, Ont.; Mason, J. H., Lachute Mills, Que.; Mersereau, H. C., Doaktown, N.B.; Miller, A. P., Chatham; Moffat, C. F., B.A., Montreal; Mohr, F. W. C., Arnprior; Muckleston, H. S., M.A., Perth; Mulligan, J. W., Omemee, Ont.; Munro, J. A., Pugwash, N.S.; Nelles, T. R. E., Simcoe; Prendergast, A. R., B.A., Montreal; Pruyn, W. G., B.A., Napanee; Richards, E. T. F., St. Vincent, B.W.I.; Robertson, A. R., Victoria; Robertson, B. W., St. John, N.B.; Rommel, E., Alma, N.B.; Ryan, L. McD., B.A., Newburg, Ont.; Sawyer, A. R., Roslindale, Mass.; Scott, W. J., B.A., Montreal; Scrimger, F. A. C., B.A., Montreal; Seifedt, F. W., B.A., Quebec; Sinclair, E. E., Summerside, P.E.I.; Styles, W. A. L., Montreal; Smith, W. A., Almonte; Sullivan, J. A., Arnprior; Tees, F. J., B.A., Montreal; Tull, J. A. C., Antigua, B.W.I.; Turnbull, E. G., Branchton, Ont.; Valin, R. E., Ottawa; Viner, N., B.A., Montreal; Waterman, C., Ogdensburg, N.Y.; White, P. G., Woodstock; Wigle, C. A., Wiarton; Wilkinson, W. M., Woodstock; Winder, J. B., B.A., Compton; Winfrey, W. C., B.L., Sault Ste. Marie, Mich.; Wood, G. O., Kenmore, Ont.; Wood, W. H., Montreal; Young, C. A., Ottawa.

Prizes were awarded as follows:—Holmes Gold Medal, for highest aggregate in all subjects forming the medical curriculum—H. C. Mersereau, Doaktown, N.B.

Final prize for highest aggregate in the Fourth Year subjects—F. J. Tees, B.A., Montreal.

McGill Medical Society Senior prizes—First, F. J. Tees, B.A.; second, J. A. C. Tull.

Third Year Prizeman—R. S. MacArthur, Summerside, P.E.I.

Sutherland Medallist—D. R. Fraser, Montague Bridge, P.E.I.

McGill Medical Society Prizes (junior)—1st, W. L. Holman, Summerside, P.E.I.; 2nd, R. J. Monahan, Montreal.

Second Year Prizeman—R. M. Benvie, Salt Springs, N.S.

Senior Anatomy Prize—A. L. McLennan, B.A., Lancaster, Ont.

First Year Prizeman—R. H. McDonald, North Bedeque, P.E.I.

Junior Anatomy—R. B. Dexter, Wolfville, N.S.

Dr. H. C. Mersereau gave the valedictory address for the graduating class, and Dr. Elder replied in behalf of the faculty.

Addresses were delivered by Dr. Roddick, the Dean, and by Dr. Craik. These are referred to elsewhere in this number.

CANADIAN MEDICAL PROTECTIVE ASSOCIATION.

This Association was organized at Winnipeg in 1901, under the auspices of the Canadian Medical Association, and its objects are to unite the profession of the Dominion for mutual help and protection against unjust, improper or harassing cases of malpractice brought against a member who is not guilty of wrong-doing, and frequently suffers owing to want of assistance at the right time; and rather than submit to exposure in the courts, and thus gain unenviable notoriety, he is forced to endure blackmailing. The Association affords a ready channel where even those who feel that they are perfectly safe can for a small fee enrol themselves and so assist a professional brother in distress. Experience has abundantly shown how useful the Association has been since its organization. The Association has not lost a single case that it has agreed to defend. The annual fee is only $2.50 at present, payable in January of each year. The Association expects and hopes for the united support of the profession.

The Executive is as follows:—President, R. W. Powell, M.D., Ottawa; Vice-President, J. O. Camarind, M.D., Sherbrooke; Secretary-Treasurer, J. A. Grant, Jr., M.D., Ottawa; Solicitor, F. H. Chrysler, K.C., Ottawa.

The Provincial Executives are:—

Ontario—E. E. King, Toronto; I. Olmsted, Hamilton; D .H. Arnott, London; J. C. Connell, Kingston; J. D. Courtenay, Ottawa.

Quebec—F. Buller, Montreal; E. P. Lachapelle, Montreal; J. E. Dube, Montreal; H. R. Ross, Quebec; Russell Thomas, Lennoxville.

New Brunswick—T. D. Walker, St. John; A. B. Atherton, Fredericton; Murray MacLaren, St. John.

Nova Scotia—John Stewart, Halifax; J. W. T. Patton, Truro; H. Kendall, Sydney.

Prince Edward Island—S. R. Jenkins, Charlottetown.

Manitoba—Harvey Smith, Winnipeg; J. A. MacArthur, Winnipeg; J. Hardy, Morden.

North-West Territories—J. D. Lafferty, Calgary; M. Seymour, Regina.

British Columbia—S. J. Tunstall, Vancouver; O. M. Jones, Victoria; A. P. McLennan, Nelson.

BISHOP'S COLLEGE.

The thirty-fourth annual convocation of Bishop's College for conferring degrees in the Faculty of Medicine was held on 31st May in the Synod Hall. Degrees were conferred upon the following graduates:—

F. W. Aris, C. S. Carmichael, R. B. Cunningham, G. W. Gallatly, F. D. Gill, E. H. Lawson, A. J. Moseley, H. G. MacKerrow, R. H. McRae, M. W. H. Pitman, N. Shacher, G. H. Silverman, H. M. Vartanian and P. Villard. Degrees in dentistry were conferred upon G. G. Armstrong, J. T. McCrea, C. Edwards and E. Elkam.

The honours of the final year were carried off by Mr. F. W. Aris, who won both the Wood and the Nelson gold medal. The Chancellor's prize fell to Mr. P. Villiard. The other prizemen of the Faculty were Mr. F. A. Norton, who won the David silver medal, and Messrs. H. C. Robins and W. J. Furst, the former winning the senior anatomy prize, and the latter the histology prize.

The Chancellor, John Hamilton, presided, and Dr. J. B. McConnell, vice-dean, read the report. The valedictorian of the graduating class in medicine was Mr. R. B. Cunningham, and Mr. G. Guelph Armstrong in dentistry. The reply on behalf of the Faculty was read by Dr. George Fisk. Addresses were also delivered by Principal Whitney and by Dr. T. G. Roddick, Dean of the Medical Faculty of the McGill University.

At the last quarterly meeting of the Montreal General Hospital the report of the medical superintendent showed that 731 patients had been treated to a conclusion in the quarter. There had been 61 deaths, 14 within three days of admission, or an average of 5.7 mortality rate for ordinary hospital cases. The number of hospital days had been 17,835, an average detention per patient of 24.3 days. The average number of patients in hospital was 198, the greatest number being 219, and the least 191. In the outdoor department there had been 11,129 consultations, compared with 9,204 of the corresponding quarter last year. The number of ambulance calls had been 318.

The Lambton Medical Association met at Wyoming on May 24th. President W. D. Newell, of Sarnia, occupied the chair. The following members were present:—Drs. Wilkinson, Logie and Newell, Sarnia; McAlpine, Petrolea; Brown, Camlachie; Newell, Watford; Harvey and Chappelle, Wyoming. Papers were read by Dr. Brown, of Camlachie, on suggestive treatment, and by Dr. Newell, of Watford, on unresolved pneumonia.

J. B. Lippincott Company announce that they will publish during the present year a translation by Dr. Albion Walter Hewlett of the third German Edition of the *Principles of Clinical Pathology,* by Dr. Rudolf Khehl, with an introduction by Dr. Osler. The work is well known in this country and in Europe as an authority upon the subjects treated.

At a meeting of the Board of Governors of the Notre Dame Hospital, Dr. Albert Demers was appointed medical superintendent in place of Dr. F. A. Fleury, who tendered his resignation. Dr. Fleury, who has been medical superintendent of the institution for many years, has gone to Paris, where he will take up special studies in connexion with the eye, ear and throat.

The Ontario Medical Association has elected officers as follows:—President, George A. Bingham, Toronto; first vice-president, Ingersoll Olmstead, Hamilton; second vice-president, E. B. Echlin, London; third vice-president, A. Gillespie, London; fourth vice-president, Hadley Williams, London; general secretary, Charles P. Luck, Toronto; assistant general secretary, Samuel Johnston; treasurer, Frederick Fenton.

A meeting of the medical men of Regina was held on May 23rd, when it was decided to organize a branch of the British Medical Association. The following were the officers elected:—President, Dr. Low; vice-president, Dr. Thomson; secretary-treasurer, Dr. Black; council of three, Bell, Charlton and Seymour. All the medical men in the prospective province of Saskatchewan will be invited to become members.

Dr. J. M. Barry was elected president of the St. John Medical Society at the annual meeting, held 31st May. Dr. T. H. Lunney was chosen vice-president; Dr. C. M. Pratt, secretary; Dr. James Christie, treasurer, and Dr. Margaret Parks, librarian.

The new medical council of British Columbia is as follows:—President, Dr. O. M. Jones, Victoria; vice-president, Dr. R. E. McKechnie, Vancouver; treasurer, Dr. W. J. McGuigan, Vancouver; registrar and secretary, Dr. C. J. Fagan, Victoria.

Port Huron's new hospital was opened to the public on 8th June. The cost of the building, exclusive of the land, is over thirty-two thousand dollars, and the building and its furnishings are said to be complete in every detail.

Dr. L. F. Barker, the successor of Dr. Osler as professor of medicine in Johns Hopkins University, Baltimore, was entertained at dinner on 12th June, at the King Edward Hotel, by Toronto physicians who were members of his class of 1890.

Messrs. Lea Brothers & Co. announce a new edition of *Gray's Anatomy*, to be published about midsummer, and embodying nearly two years of labor on the part of the editor, J. Chalmers DaCosta, M.D., of Philadelphia, and a corps of special assistants.

The first international congress for the study of radiology and ionization will be held during the present year at Liège, between the 12th and 14th of September (inclusive).

Dr. Edward Macklin, of London, died on May 29th. He was a graduate of the Western University, and at one time surgeon on the Allan line of steamships.

Retrospect of Current Literature.

MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY, H. A. LAFLEUR AND W. F. HAMILTON.

ROBINSON, BEVERLEY. "Some Phases of the Neurotic Heart." *The Amer. Journal of the Med. Sciences.* June, 1905.

The neurotic heart ever affords an interesting topic for discussion, and not a few questions gather about this subject touching the management and treatment of such cases. Dr. Robinson concludes his discussion of some phases of the neurotic heart by saying he would specially emphasize certain facts which seem to him true, but as yet either insufficiently recorded or recognized, viz.:

1. "An apparent or evident slight cardiac enlargement with or without dilatation, and it may be slight hypertrophy, occasioned by or proceeding directly from a cardiac neurosis."

2. "A condition of secondary anæmia, as shown by a careful microscopic blood examination, with count and differentiation of white cespuscles, which remain stationary for a long while, despite the use of chalybeates and most rational treatment from every standpoint."

3. "The absolute or relative uselessness of digitalis, notably, unless the heart muscle is involved, and, even in these instances, for acute manifestations of weakness or failure strophanthus is far more useful."

4. "Impaired nutrition, at a given period, of the muscular walls of the heart under the immediate dependence, probably of diminished nervous energy, gives rise to slight cardiac dilatation at times, which subsequently, under judicious treatment, remains stationary as to amount, and becomes functionally compensated."

J. F. Dixon. "Course and Treatment of a Case of Chorea Insaniens, associated with Pregnancy." *The Dublin Journal of Medical Sciences.* March, 1905.

On account of the comparative rarity of cases of chorea-insaniens as well as on account of the apparent want of uniformity of opinion as to whether or not such cases should be certified as insane, and treated as lunatics, the writer sets forth the features as presented in a case so classified. It is noted that there are 226 cases of chorea on record as occurring in connexion with pregnancy, but it is not stated how many were of the maniacal type. Of these 226 cases, 6 preceded the pregnancy; 105 occurred during pregnancy; 31 in recurred pregnancies; 16 cases developed post-partum, while 45 cases terminated fatally. Chorea is comparatively rare in the last three months of gestation, and it is in this period that the writer's case occurred.

The patient, a bright, intelligent woman, aged twenty-two years, was admitted to the County Asylum, Arlesey, in October. She had been a laundry maid, and in the previous February had suffered an attack of rheumatism. While yet convalescing, she married in March, and in September she fell down stairs. About a week after this accident she became choreic. Beginning in the ring finger of the left hand, the movement gradually extended until the whole left side was involved. She lost sleep, and became violent. She was often abusive to her mother, and at times had the idea that she overheard people talking about her extravagance. She had delusions and hallucinations definite enough to constitute insanity in the eyes of the law.

At first, under the influence of good hygiene, Fowler's solution, and a bromide and chloral draught at night, she improved. Again sleep left her, and she became noisy and excited, and even violent, smashing furniture and severely handling two nurses. She had frequent crying fits; frequently held conversation with people under her bed, and often thought nurses were accusing her of all sorts of wickedness. She was delivered of a healthy male child on the 26th of November, but she had no interest in her baby. On January 30th she was discharged completely recovered.

CRAIG, JAMES. "Sequel to a case of Innominate Aneurysm reported in 1898." *The Dublin Journal of Med. Science.* May, 1905.

It is interesting to read a case report such as Dr. Craig gives of an aneurysm after many years. In June of 1897, the patient, a man of 65 years, presented the physical signs of innominate aneurysm. He rested in bed for over two months, and then began to move about from place to place, spending most of his time at continental health resorts. "He grew strong, lead an active out-door life, and never complained of illness." In the spring of 1904 he was at Wiesbaden. On Sunday, April 24th he was at a dinner party, and enjoyed himself thoroughly. On the following Wednesday he remained indoors, feeling out of sorts. That night he suddenly sat up in bed, blood poured from his mouth, and in a few minutes he was dead." At the post-mortem examination it was found that the aneurysm of the innominate, which was diagnosed years before, had become consolidated and did not give any trouble, but there existed a second—much larger—aneurysm of the thoracic aerta, which had perforated into the œsophagus close to the stomach, so situated that it probably could not be diagnosed at all.

In discussing this interesting case, Dr. Craig points out that, while the consolidation of the innominate aneurysm its wall measured about one inch in thickness) was in itself an interesting fact, the sudden death of the patient from rupture of another and much larger aneurysm seven years after the onset of the one which became quiescent is worthy of note.

WEST, SAMUEL. "The Treatment of Pleuritic Effusion by Paracentesis, and Incision in Serous Effusion, Empyema and Pneumothorax." *The Lancet,* March 25th, 1905.

Dr. West says that the derivative method of the treatment of pleuritic effusion has been tried and found wanting, and no wonder, as it is based upon incorrect theory. Early tapping has been advocated chiefly for two theoretical reasons—(1) that early tapping shortens the duration of the attack, and (2) that, if the lung be left long compressed by fluid, it will become bound down by adhesions and thus prevented from re-expanding. With these reasons West is not in accord. The reasons are not strictly accurate. Urgent dyspnœa, due to congestion of the opposite lung—"a functional breakdown or incompetence, in which probably both the heart and the lungs take their share"—calls for immediate paracentesis. There are no contra-indications to paracentesis.

The best method of tapping a serous effusion is what is called syphonage. The apparatus consists of a trocar and cannula connected with a rubber tube reaching to the floor, its lower end dipping into and under a glass of sterilized water. West claims for this method the advantage of avoiding the distress so often arising during aspiration. Paracentesis may be repeated as often as is necessary, but when it fails, free incision may be necessary.

Empyema needs incision, and needs it early. The best place, when a choice is open, is just in front of the post-axillary border and on the transverse level of the nipple. Resection of a rib is not always necessary. Contrary to the general view, West states that there is no danger whatever in washing out the pleural cavity. He has washed the peura out many hundred times, and has never seen a patient become faint from it.

In discussing the subject of pneumothorax, the writer states that tapping may be indicated at two periods—(1) immediately after its occurrence, and (2) later when effusion has formed. For the first indication the apparatus for syphonage is used, and when serum or pus is found the treatment should be on general lines. The prognosis for hydro-pneumothorax is by no means bad, and West believes it would be better were paracentesis performed earlier than it usually is. The rule is laid down without hesitation that pyopneumothorax should in all cases be treated like empyema, i.e., the side should be laid freely open and drained so soon as the presence of pus has been established.

Shaw, H. Batty. "The Treatment of Tuberculosis of the Lungs by means of Tuberculin and other Bacterial Derivatives." *The Lancet,* April 8, 1905.

For about fourteen years tuberculin has been before the profession, and during this time it has undergone several modifications. There is what is known as the "old" tuberculin, the original preparation of 1890, and tuberculin (T). Then, in 1897, Koch produced a series of tuberculins. Tuberculin Oberer, known as tuberculin O., tuberculin "rest," or tuberculin R., and tuberculin alkalinum or tuberculin A. The reason for the introduction of these agents was that it was felt that the original tuberculin contained but little of the toxic substances capable of provoking in the human body anything approaching to immunity. Of these three new tuberculins, whose method of preparation need scarcely be described here, tuberculin R. is the agent which is mostly

used. Besides these two groups—the old tuberculin and the new tuberculin of 1897, which has three varieties—there is yet another, known as Koch's new tuberculin, or better known as the "emulsion of tubercle bacilli" or "bacillary emulsion." Béraneck, Denys, Hirschfelder, Hunter and Hahn and Ruppel have worked with tubercle bacilli, and have striven in various ways to gain some modifications of tuberculin, each more potent or less harmful than the other. Kleb's modification yielded a product of the nature of albumoses, possessing an enzyme action, and to this modification the terms tuberculocin and anti-phthisin are applied. Tuberculo-plasium, a solution obtained by Hahn, following Buchnes's method of hydraulic pressure of masses of tubercle bacilli. Von Ruck and Hunter have each prepared an aqueous solution of Koch's tuberculin, hoping to obtain an agent producing no harmful symptoms. So much for the various preparations derived from the bacilli of tuberculosis.

Then antituberculous sera have been prepared and recommended with more or less enthusiasm. They are produced in the same way as antidiptheritic serum. The principle of preparation is "to secure the neutralization of toxins produced by the tubercle bacilli in infected individuals by the development of antibodies, to secure the production of bacteriolysins for the purposes of solution of the bacteria, or to increase the functions recently prescribed by Wright as an opsonic pressure or power present in the serum, by which power the bacilli succumb the more readily to the digestive action exerted by the phagocytes of the blood."

Maragliano and Marmorek's sera are those most in requisition. It is claimed for the former that it is both bacteriolytic and antitoxic. Marmorek aims at minimizing the animals in his experiments. Vaccination against tuberculosis is a misnomer in the first place. Theoretically and practically, the treatment is a serum treatment. The idea is that tubercle bacilli may be so attenuated by various means, that inoculation with them does not produce any tuberculous disease, but is capable of producing antibodies.

The serum of these inoculated animals has been used, and thus, as we have said, it is a serum treatment, or, according to Maraglino, the so-called vaccine he uses is non-living, so that it cannot be other than some form of tuberculin or serum.

Another method of treatment of pulmonary tuberculosis aims at overcoming the secondary infections, which prove so serious when once tubercle bacilli gain access to the lungs. The difficulty in finding an antistreptococcic serum which will, in a remedial sense, fit the particular streptococcus causing the septicemia is a very great one. The poly-

valent antistreptococcic serum may be found of some value under such conditions.

The application of tuberculin in treatment is described, and statistical results in early cases of pulmonary tuberculosis are published.

Of 656 reported cases, the percentage of cures observed in some instances for six years after treatment was 91. Of 651 cases not treated, only 62 per cent. of cures is reported.

Upon the use of Marmorek's serum opinions differ, and this seems only natural. From "no favourable results" to "distinctly beneficial results" the various reports run. One observer says the "results quite justify a continuance of the method." Maragliano's serum appears to be disappointing. The antistreptococcus treatment of tuberculosis has been tried in a very limited number of cases indeed, and for this, if for no other reason, nothing conclusive can be said concerning its use. In closing, Dr. Shaw says that, "judging from the evidence, it would seem that the use of tuberculins materially improves the results of treatment. It would seem therefore quite justifiable to supplement the ordinary treatment by sanatorium methods with this specific one. Tuberculin treatment is of little use alone, so that its re-introduction, though of such material value, would not reduce the cost of treatment."

W. F. H.

E. Grawitz. "Blood Diseases and Balneology." *Berliner Klin. Woch.*, May 8, 1905.

The author considers that in anæmia the most important feature to be aimed at is the prevention of circulatory disturbances and autointoxication; the ingestion of albumens and nitrogenous foods constitutes a danger of increased ptomain formation in the bowel, and he therefore advocates a vegetarian regime in severe cases, with temporary habitation in high altitudes.

E. Riegler. "A Method of Testing for Bile Pigment in Urine." *Revista farm.*, 1904, No. 3.

Two solutions are used—(1) 5 grms. paranitroamidobenzene are dissolved in 180 c.c. distilled water, and with this is lightly shaken 25 c.c. sulphuric acid; (2) 2.5 grms. sodium nitrate in 200 c.c. distilled water. These solutions keep well. To use the test, take 4-5 cc. chlorform in a tube, shake with the urine, and let the chlorform fall to the bottom; decant off the urine carefully, and shake the chloroform with a similar quantity of 96 per cent. alcohol; into this put 5-6 drops of each solution, and shake well. If bile pigment is present, a red or

orange colour appears in the chloroform at the bottom. This method is said to be much more delicate than Gmelin's test.

Carlos Franca, Lisbon. "The Treatment of Epidemic Meningitis." *Deutsche Med. Woch.*, May 18, 1905.

França injects by lumbar puncture 25 to 50 c.c. of a one per cent. solution of Lysol; in adolescents he used 12 to 18, in children 3 to 9 c.c. The injection is attended by rapidly-disappearing pain, and is continued daily till the bacteria are no longer found. His hospital statistics are as follows:—Previous to this method, of 47 cases, 63 per cent. died; by injection of cyanate of mercury in 9 cases, 66 per cent. died, and in 58 cases, treated by Lysol injections, but 29 per cent. were fatal.

B. Stiller, Budapest. "Internal Treatment of Cholelithiasis." *Wiener Med. Woch*, No. 1, 1905.

This author's observations, supported by those of Chauffard independently, point to the usefulness of sodium salicylate, 0.5 g. (7½ grains) four times a day during the period free from attacks. To this, for analgetic effect, he adds .01 g. of extract of belladonna, and combines with it the use for two or three hours daily of warm applications to the liver region.

F. Huppe (A. Hirschwald, Berlin, 1904). "Alcohol." Abstract from *Brit. Med. Jour.*

F. Huppe argues that civilized man cannot exist without a stimulant of some kind or another, and distinguishes between the harmful consumption of "alcohol," made so prominent by temperance reformers, and the beneficial use of alcoholic liquors, even though the latter may contain as much as 60 per cent. of alcohol. He shows that alcohol can be a food, and can replace the fat or carbohydrate of a diet to a certain extent, just as it can act as a poison when taken in excess. It is not a protoplasmic poison, as HCN is, for example, and at the worst may be compared to a whip; for just as a whip stimulates a tired horse, so alcohol can stimulate tired muscles and nerves to further exertion. The connexion between beer-drinking and cardiac hypertrophy is not proven, and the author states that many medical men—Strümpell, for example—who at one time advocated teetotalism, now advise instead the moderate use of alcoholic liquors. Recommending the temperate use of alcohol himself, he says that it is entirely bad for children, for invalids of certain kinds, and for nervous persons in general; its use should be interrupted by periods of abstinence. He produces figures

to show that alcoholic excess does not tend to shorten life, or to the commission of offences against the law, and that it has no connexion with the occurrence of insanity. But he strongly recommends abstinence from alcohol to all weak-minded persons, and thinks that their education in this respect should be seen to by the State.

S. von Ruck. "The Heart and Circulation of the Prognosis and Management of Pulmonary Tuberculosis." *Medical Record*, June 3, 1905.

S. von Ruck says that the relation of the heart and circulation to the course of chronic pulmonary tuberculosis is a factor both in the prognosis and management of such cases which is not generally accorded the attention and study which its importance demands. He suggests the analogy between the relation of the heart and circulation to the local disease in acute pneumonia and in chronic pulmonary tuberculosis. According to his conception this relation differs chiefly in that the pulmonary obstruction develops rapidly in the one, and more slowly in the other. By reason of this difference more can be done to conserve or increase the power of the heart in phthisis than is possible in acute pneumonia. It follows that close observation of the circulation in the course of phthisis is imperative and that a weak second pulmonary sound is to be regarded as a danger signal just as in acute pneumonia. Over exercise is considered by the author as a potent factor in the production of tachycardia in consumptives, and he cites statistics from the Winyah Sanitarium showing that of sixty patients with disturbed heart action, in fifty-eight per cent. over exercise had been a contributing factor in its causation. For the entire number of two hundred and sixty-one patients the figures show seventy-two and eight-tenths per cent. of satisfactory results, whereas for those with tachycardia the figures show only thirty-four and one-tenth per cent. The restriction of exercise for consumptives with weak hearts is strongly urged, and the physical management of such patients, together with the regulation of the diet, bathing, etc., is described in detail.

Oskar Klotz. "Defects of the Agglutination Test." *Journal A.M.A.*, March, 1905.

Dr. Klotz calls attention to certain possible sources of error, aside from the necessity of a more uniform technic rendering possible comparisons of work by different observers. The age of the culture affects the result as its susceptibility to agglutinins increases for the first six months after isolation from the animal body and growth on artificial

media. Inoculations in animals with broth culture produces in their sera, beside the agglutinins, precipitins whose reaction in broth culture can not be distinguished from true agglutination, the organisms being deposited mechanically in the precipitate. Pseudo-clumping may be obtained by using emulsions of bacteria in undiluted broth and testing against the above serum. The agglutination of a micro-organism varies with the medium in which it is grown, the reaction of that medium, the temperature of incubation, and the number of organisms present in the emulsion. Pseudo-clumping may be due to sudden changes of temperature or to the addition of certain chemicals. Carbolic acid or chloroform added as preservatives to immune serum does not affect the agglutination reaction. In using the dried blood test, paper having a soluble gloss should be avoided for collecting the blood. Klotz finds the macroscopic method for determining agglutination the most useful and rapid, and places a time limit of three hours on all these reactions.

S. J. Maher. "The Cause of Cerebrospinal Meningtis." *Medical Record,* May 6, 1905.

Dr. Maher describes cultural and animal experiments undertaken with pus from the spinal canal of an adult sick with cerebrospinal meningitis. The results lead the author to say that his findings seem to show that the diplococcus of Weichselbaum is only one phase in the life cycle of an organism, which at times is larger and rod shaped, at others small and of the shape of the pneumonia diplococcus, and probably at others of yeast shape.

W. T. Howard, Jr. "Variola." *Journal A.M.A.,* April 8, 1905.

Dr. Howard, Jr., has followed up the study of the organism found by Councilman, McGrath, Brinckeroff and Tyzzer in variola and its life cycle. He finds that these bodies in their various stages are constantly present in the skin lesions of vaccinia and variola, and gives the technic of their study. Zenker's fluid is the only fixative that is satisfactory, and it is important that the section should be made so as to include the whole thickness of the skin. Mallory's is the best methylene blue eosin stain for these bodies, but other methods, such as that of Borrel and Weigert's fibrin stain, preceded by carmin, may be used. The bodies stain brilliantly, and with a good light and an oil immersion lens, should be easily recognized in properly prepared specimens. In the later stages of the disorder the Borrel stain is best. A second cytoplasmic stage recognized by Howard and Perkins is found only in well-established variola vesicles, never in vaccinia, so far as known. The other stages are the intranuclear ones, already described by Calkins, with

the exception of one which was not found by Howard, and which appears in the later stages of the eruption. It is useless to look for cytoplasmic forms (excepting in local autoinfections) in late lesions or for the intranuclear forms in early ones. The importance of these findings is in the service they may render in the early diagnosis of variola and vaccinia. Howard believes that this can be made in doubtful cases with the result of cutting short variola epidemics in their beginnings.

PATHOLOGY.

UNDER THE CHARGE OF J. G. ADAMI.

O. Israel. "On Active Lymphocytosis and the Mechanics of Emigration." *Berliner Klin,* May 1, 1905.

Israel reasserts his belief that the lymphocytes have not, as have the leucocytes, a definite power of emigrating through the vessel wall; they are found in the blood, and outside the vessels in the tissue, but he considers the latter origin as due to their being born of pre-existent lymph sinuses and other tissue spaces. His conclusions are based upon the condition of the nucleus, which does not lend itself readily to great compression as does the leucocyte nucleus, and upon his failure to find them, with the most careful technique, in direct association with the vessel wall.

A. Neisser, at present in Batavia. "Attempts at Inoculation of Syphilis upon Apes." *Deutsche Med. Woch,* May 11, 1905.

Cutaneous injection was made in 25 cases with 23 successful results, so far as swelling, reddening, infiltration and glandular enlargement may be considered signs, when no mixed infection occurs; scarification of the skin was followed by rubbing in of condylomatous material. Subcutaneous inoculation of tissue failed throughout. Subcutaneous and intraperitoneal injection of undefibrinated blood was likewise useless. Inoculation from animal to animal was also without result. Material that could be injected from the spleen, bone-marrow and liver of infected animals, caused no signs of the disease in other animals; but these animals, at a later date, with one exception in a large series, were inoculated direct from the human subject.

Arnal and Salmon. "Pathological Anatomy of Syphilitic Lesions in Anthropoid Apes." *Ann. de l'Inst. Pasteur,* July, 1904.

In connection with Neisser's work on apes, it is of interest that these observers find that the hard chancre of male chimpanzees shows the

characteristic histological signs of syphilis; the perivascular infiltration, the absence of giant cells, the absence of polynuclear cells, and the frequency of plasma cells are all observed.

Löhlein. "On Fat Infiltration and Fatty Degeneration of the Human Kidney." *Virchow's Archiv,* Vol. 180, Part I.

Fat infiltration consists, according to the author, of the presence of fat droplets in the epithelium of the tubules, while the interstitial tissue is completely or almost free from fat; these cases are free from albuminuria. In fatty degeneration there is a deposit in irregular areas between the tubules of fatty substances, which have a partly crystalline composition; accompanying this form is albuminuria with great destruction of the tubular epithelium. The examples given from the former as types, are the kidneys of coma diabeticum, and of the latter, the kidneys of Bright's disease in its different forms.

H. Kuster, Göttingen. "On Glioma of the Adrenal." *Virchow's Archiv,* Vol. 180, Part I.

A new tumor has arisen, and Küster, under the guidance of Professor Ribbert, assigns it to the above stated category. In a child of 14 weeks, a supposed sarcoma of the kidney proved to be adrenal; in fact, both adrenals were the seat of growth, and a third tumor, considered as secondary, occurred in the liver. The second case occurred in a man who died of pyæmia following a septic arthritis; there were no metastases. The characteristics of the tumor are: (1) very numerous, circular nuclei, rich in chromatim, often in "rosette" formation; (2) almost complete absence of protoplasm belonging to the nuclei, its place being taken by a fine fibrillar network. The likelihood of the diagnosis being correct is, of course, borne out by embryological facts.

J. McC.

Society Proceedings.

SOCIETE MEDICALE DE MONTREAL.

Meeting of 13th April, 1905.

Dr. Oscar Mercier, President, in the Chair.

Dr. Dubé read a paper upon the struggle against secret remedies.

Dr. Mercier reported two cases of strangulated hernia, from which he demonstrated the necessity of freeing the tumour in all its parts.

Dr. Dubé read a paper upon acute dilatation of the heart and its treatment.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The fifteenth regular meeting of the Society was held Friday, May 5th, Dr. J. A. Macdonald, President, in the chair.

CHORIO-EPITHELIOMA.

F. A. L. Lockhart, M.D., read a paper on this subject, with report of a case; B. W. D. Gillies, M.D., gave the pathological report.

Wm. Gardner, M.D. I was very much interested in this report of the very first case of this rare form of malignant disease which has appeared in Canada. I have been on the lookout for this condition for a good many years and have never yet, with any certainty, found a case. I can recall one, however, which in the light of the researches of Sänger and of the present paper was probably one of this kind. The patient was a young married woman who had been confined six weeks previously, and whom I was asked to see by the late Dr. Burland. The history was that of almost continuous hæmorrhage. She was anæsthetised, and on dilating the cervix, which was easily done, a mass the size of a walnut was discovered. This I took to be placental tissue. It was easily removed, but the hæmorrhage was so frightful, in spite of packing the uterus, injecting vinegar (which was available at the time) and perchloride of iron, the woman died on the table. That is the only case occurring in my practice which I think was probably one of this kind, and that was some fifteen years ago. Since then, both in the General Hospital and in the Royal Victoria, though we have a fairly large amount of experience, my colleague, Dr. Chipman and myself have not yet discovered a case. Some years ago I exhibited a specimen of the hydatidiform degeneration of the chorion. The patient's uterus was as large as a six months' pregnancy, and half an ordinary pailful of these grape-like masses was expelled. As this disease is known to follow this degeneration I watched the case for some years, but the patient has always kept in apparently good health.

John McCrae, M.D. A year ago last February I received for examination the uterus from a case which I took to be one of this nature. The case occurred in the practice of Dr. Henry Howitt, of Guelph, and was that of a woman aged 35 years, the mother of four children. Within a short time, a comparatively small number of weeks, after an abortion there was a a hæmorrhage, which Dr. Howitt found to be quite intractable. Before operation he made a diagnosis of chorio-epithelioma and at once removed the uterus. The patient appeared to do well, but at the end of three weeks died suddenly, with symptoms of pulmonary embolism. The uterus had a tumour in the posterior wall about the size

of the first joint of the thumb, which seemed to grow almost without boundary into the uterine wall itself. Sections of this were made and the remarkable thing about the whole tumour was that with so unmistakable a tumour there should be so comparatively little active tissue, and yet the villi could be seen growing in the maternal sinuses and the layer of Langhans was found to be actively proliferating from its intense staining. To give Dr. Howitt further assurance I sent the specimen to Prof. Welch, of Baltimore, and his answer was that "if it was a tumour, it was certainly a chorio-epithelioma."

W. W. CHIPMAN, M.D.: We are all extremely interested in this report, and especially so in that these cases are so rare in Canada, although they are not so rare in other parts of the world. Through the kindness of Dr. Lockhart I saw several of his sections some time ago, and I confess that after looking them over I was extremely sceptical as to the real nature of this tumour. The specimens which I have looked at this evening seem very much more like the lesion in question, and certainly the clinical history of the case would seem identical with that of a chorio-epithelioma. I may say that I have seen sections from four cases of typical chorio-epithelioma and the microscopical appearance of the tumour as it appears in the typical arrangement is very different from the present case. To me the clinical history is far more conclusive, and, if I may make a suggestion, I would propose that the slides be sent to some second authority and his opinion obtained upon the point. It is extremely rare to find primary chorio-epithelioma in situations other than where a normal ovum may be engrafted, namely, in the tube or in the uterus. In Dr. Lockhart's case the woman was 47, and her last pregnancy was three and a half years before the appearance of the tumour. She developed this tumour in her vagina. And here I should like to ask whether the tumour in the vagina was of sufficient importance to account for the patient's failing in general health; it strikes me as being not quite sufficient to account for this. Was there any other complication? The period of onset, then, is the first thing, which makes this case somewhat unusual, though, of course, it makes it all the more interesting. Then the fact that the primary site was in the vagina, is yet another interesting point. The burden of proof in this case rests with the microscopical appearances, and comparing these with the other cases I have seen, the likeness is not at all striking. Rather does the tumour fall under the head of the atypical variety, as described by Marchand and Ludwig Pick.

The specimen mentioned by Dr. McCrae I saw, and to my mind it

looked certainly a chorio-epithelioma, both in its microscopical and macroscopical appearance, and, with the after history to bear out such a diagnosis, the case is, in my opinion, rendered conclusive.

F. A. L. Lockhart, M.D.: I think that, judging from what Dr. Gardner has said, there can be very little doubt that the case which he cited was one of chorio-epithelioma. After the publication of Sänger's paper many cases of this disease, which had been previously diagnosed as ordinary carcinoma, were unearthed, the earliest having been seen in 1844. The chief clinical point of importance is the severe and uncontrollable hæmorrhage which is present. As to Dr. Howitt's case, which Dr. McCrae has cited, I wrote to him some time ago asking where it had been published, as I had understood that it had been reported at the meeting of the Canadian Medical Association last August. He replied that the case which he had reported at the meeting was entirely different; he said nothing about a case of Chorio-epithelioma, and, therefore, it is probable that it has not yet been recorded, in which event mine is the first case to be reported in Canada. With regard to the clinical history of my own case, it certainly is fairly typical, and the lapse of time which had occurred between the last pregnancy and the appearance of the symptoms of disease, which Dr. Chipman has emphasized as being an important point against the correctness of the diagnosis of the case, has been exceeded in several undoubted cases. McCann reported a case where the disease appeared nine years after the last pregnancy, and others have been observed with intervals of six and three years, so that the interval of three and a half years is not excessive. As to the exception that the site was not typical, I shall state that one observer has collected at least 17 cases where the original growth was situated in the vagina. The microscopical appearance of the growth could scarcely be more typical. One can see the syncytial masses and quantities of the cells of Langhans, and the tumour growth presents a villous appearance. The presence of syncytial masses alone, especially when outside of the placental site, is enough to found one's diagnosis upon.

J. G. Adami, M.D.—From the characteristic history of these two cases alone we must, I think, conclude without hesitation, that both Dr. Lockhart's case and Dr. McCrae's are examples of chorio-epithelioma, and further study of the histological appearance must convince us that this is so. I have, however, to confess that at first when Dr. McCrae showed me sections from his case I was somewhat doubtful. I had been looking out for and hoping to obtain a specimen of this condition for ten years or more, and from the bearing that this form of tumour

has upon a theory of tumour formation had familiarized myself with the descriptions and illustrations of the leading cases. It is, however, curious how, when we owe our knowledge of the subject purely to descriptions and illustrations, we are apt to obtain preconceived notions. Dr. Chipman, who has seen and studied other specimens, was, as he told us, of opinion that Dr. McCrae's sections were typical and those of Dr. Lockhart's atypical. My own opinion, when first I studied these two sets of specimens, was exactly the reverse, and I imagine that it was my doubts, if not my suggestion, that led Dr. McCrae to send his sections to Professor Welch with the results he has reported. I am wholly satisfied to accept Professor Welch's opinion, and we may congratulate ourselves that here before our Society we have had communicated this evening what are probably the first two cases of the condition that have been reported in Canada.

E. W. Archibald, M.D.—Several years ago I had the opportunity of studying the microscopical sections of a case of chorio-epithelioma in Aschoff's laboratory. Upon the basis of that experience, and judging purely from the histological appearance of the sections brought before us by Dr. Gillies, I would say that there remains but little doubt in my mind as to the fact of the growth being a syncitioma malignum. Apart from the positive evidence adduced by Dr. Gillies, which I need not recapitulate, the strong point, to my mind, in favour of the diagnosis of chorio-epithelioma lies on the negative side. That is, I know of no tumour, other than chorio-epithelioma, arising in the vaginal or perivaginal tissue, which could give the histological picture of these sections. They may not duplicate a text-book illustration, but they certainly resemble the growth mentioned a great deal more than any other with which I am acquainted.

CHRONIC HUMAN GLANDERS.

James Bell, M.D., J. G. Adami, M.D., and G. D. Robins, M.D.—Chronic Human Glanders (with Pathological specimen). Dr. Robins read a paper on this subject, and Dr. Bell gave the case report.

Dr. Bell.—This patient, as stated by Dr. Robins, came under my care in the Royal Victoria Hospital, on the 28th May, 1901. He was discharged, in fairly good condition, on the 21st of September, following; re-admitted on the 24th February, 1902, and died September 1st, 1902, a little more than fifteen months from the time when I first saw him.

When he first came to the Hospital he had slight fever, glycosuria, three scars, with sinuses on the lower extremities, one or two on the neck, and one just above the glabella on the forehead. These had all been apparently skin and cellular lesions, and, after curettage, all healed

satisfactorily. He complained of headache, and had been complaining for some months, and on June 20th a nodule appeared in the middle line over the occipital bone. On the 7th of July a nodule developed over the head of the left fibula. On the 23rd of July, both these abscesses, from the head of the fibula and over the occipital, were opened without an anæsthetic, and from the occipital abscess about two ounces of thick pinkish pus escaped, and an opening was found in the bone as large as a twenty-five cent piece, with soft granulomatus material between the bone and the dura. The abscess over the head of the fibula was found to be smaller and to contain a small quantity of pus only. On the 1st of September a lymph gland was found enlarged at the root of the neck, just internal to the sterno-mastoid. This was incised and curetted, and by the 21st it had healed, and the patient was discharged in fairly good condition.

On the 24th of February, 1902, he returned with a gland in the left posterior triangle of the neck, as large as a hen's egg, which had been noticed for five weeks and had been increasing gradually. It was painless and moveable. The occipital sinus continued to discharge, and some of the old scars had reopened. On the 27th, the gland was removed and found to be suppurating. The occipital wound was curetted and again a large quantity of granulomatous material removed, which, from its appearance, created a suspicion that it might be brain substance; although, I believed, that the lesion was external to the dura, as was subsequently demonstrated at the autopsy.

More lymph glands became infected and were removed from time to time. His general health failed, painless enlargement of the liver developed, and he died comatose on the 1st of Sptember, 1902.

As Dr. Robins has already narrated, the glanders bacillus had been frequently found in nearly, if not all, the local lesions, and repeated inoculation tests had demonstrated the correctness of the diagnosis. The general clinical picture, however, was that of a man with a chronic pyæmia, or multiple superficial tubercular lesions; or, perhaps, tertiary syphilitic lesions.

He was cheerful, and did not suffer except from headache, which, I believe, was due to the occipital lesion which seemed to have its origin within the skull, but external to the dura mater. It will be noted that the very first local lesion observed, was in the skin of the forehead, and that there never was, at any time, any evidence of lesion of the mucous membrane of the nose, or respiratory passages, or elsewhere; and that the next series of lesions was in the cellular tissues of the extremities Then came the occipital lesion, which was probably primarily a bone

lesion, and later came a series of lymph gland lesions, and finally, the liver lesions.

The infection, therefore, was apparently at first disseminated through the blood channels and later along the lymph vessels; and, finally, to the liver, presumably through the general circulation.

J. G. Adami, M.D.—It is not a little interesting in following Dr. Robins's admirable study of this case, to note how this form of infective granuloma resembles the other forms in so many particulars, to see the likeness in clinical manifestations, and the further likeness which shows itself certainly as regards tuberculosis and the ray fungus in the character of the causative organisms. They all—the glanders bacilllus, the tubercle bacillus and the actinomyces—belong to the group of higher bacteria, which have a tendency to branch. In this connection it is interesting to note the relationship stated between the diphtheria and glanders bacillus with regard to agglutination tests, for the bacillus diphtheriæ appears also to be allied to this same group of potentially travelling bacteria. Attention may be called to the character of the exudate or fluid of the glanders masses in man, for this same glairy fluid, which is not a true pus, is characteristic of the glanders and farcy tumours in horses, and in them has been spoken of as "farcy oil."

While Dr. Robins is now with us in Montreal, it is worthy of note that this remarkable and thorough study of an individual case was made while he was a country practitioner. Would that more country practitioners contributed to us studies of a like nature!

The sixteenth regular meeting of the Society was held Friday, May 19th, Dr. J. A. Macdonald, president, in the chair.

MIXED TUMOUR OF THE JAW.

Donald A. Hingston, M.D., presented for Dr. Marien of the Hôtel-Dieu, a living case from which a mixed tumour of the upper jaw had been removed, and also exhibited the pathological specimen and photographs of the patient before operation.

The report of this case appears on p. 490 of this number.

James Bell, M.D.—I saw this patient before operation, and it certainly was the most remarkable face tumour I had ever seen. Dr. Marien is to be congratulated upon the successful result of the operation. We, of course, all felt at the time that the case was operable and that the tumour was non-malignant, though of course it was a very big undertaking. If now something is done in the way of a plastic operation, the result ought to be very good indeed. The Society is greatly indebted to Dr. Hingston for his very clear presentation of the case.

FRANCIS J. SHEPHERD, M.D.—I also saw this patient before operation, and looked upon the case as being a curiosity in surgery, and as a most remarkable tumour. I have never seen one like it. Of course, long ago, when all kinds of tumours were allowed to go on for a long time before anything was done, such enormous growths were more common, and in some of the old surgical works one frequently meets with pictures much as this man has presented. We all congratulate Dr. Marien on the success of his operation, and on his having such a good expositor in Dr. Hingston.

FIBROIDS OF THF UTERUS.

A. LAPTHORN SMITH, M.D., exhibited four fibroids of uterus which he had removed when they were yet small, and brought them before the Society as an illustration of the change of opinion in the profession as to the time for their removal. Formerly the rule was to allow such tumours to go on until they were of enormous size, some weighing up to 70 lbs. Now, it is pretty well agreed that a fibroid tumour should be removed just as soon as diagnosed, and so save the patient a life of invalidism. For there is to be taken into account the reflex sympathetic disturbances, as well as pressure on the bowels, bladder and ureters, and when there is hæmorrhage, the alteration in the blood and the weakening of the heart muscle, with dilatation and murmurs, which all disappear after the tumour has been removed. Another advantage is to the operator himself, as the removal of the tumour while small is exceedingly easy, and there is practically no death rate; some operators have had 100 cases without a death. A few years ago the death rate was reported as high as 5 per cent. Dr. Smith had operated on 22 without a death, while in 43 cases only one death occurred. The patients from whom the specimens shown had been removed all made good recoveries. In the largest one of the specimens there were two pus sacs, one of which contained more than a quart of foul smelling pus, and the other nearly a pint, thus illustrating another danger of waiting too long. He had seen several large fibroids suddenly become malignant.

CARCINOMA OF THE RECTUM—RECTO-VESICAL FISTULA.

J. ALEX. HUTCHISON, M.D., and W. G. RICKER, M.D.—The patient was a male, admitted to the General Hospital, February 1st, complaining of sharp pain in the left groin on passage of fæces, and of muddy coloured urine. He had several distinct attacks of pain during a period of three weeks, the last on the day of admission. The pain was of a peculiar bearing-down character, high up in the groin, and apparently referred to a very deep region. The urinary history was that during each of these attacks of pain the urine had been muddy, particularly

the last portion passed, and that the odour was distinctly foul and fæcal. Some doubt was thrown upon the patient's story, as the examination gave an impression different from what the clinical history would lead one to believe. On admission, it was shown that he was somewhat wasted and quite anæmic; the chest was negative. The abdomen was flat in the lower left quadrant, and on very deep palpation one felt a certain amount of resistance; there was no distinct tenderness; no mass could be felt and no area of dulness over that region. A cystoscopic examination was performed, but on account of the very muddy contents of the bladder it was unsatisfactory.

The cause of death in this case is particularly interesting. The cystoscopic examination was performed at three o'clock in the afternoon by Dr. Hutchison. Previously the patient had had a saline purgative, and the bowels moved freely, and he had had urinary antiseptics for some days. At twenty minutes to eight that same evening the patient passed urine with a considerable amount of pain, and half an hour later there was a distinct chill. The temperature rose to 106°, followed by profuse sweating, and 13 hours from onset of chill the patient died, the temperature never falling below 104°. The post-mortem showed a carcinoma of the rectum, which had ulcerated into the bladder, forming a recto-vesical fistula, corroborating the patient's story of the passing of muddy urine, which had a fæcal odour.

In this connexion another very interesting case was worthy of mention, also a case of Dr. Hutchison's. The patient had been operated on for vesical calculus, a suprapubic incision being made, and suprapubic drainage established; the bladder had been infected previously. Ten days after operation the drainage tube was removed, and on the seventeenth day the wound had so closed that urine was passed by the patient through the urethra for the first time. About one hour after this the patient had a chill; the temperature rose to 103°, and remained high for two hours, reaching normal at the end of six hours.

The first case was distinctly one of urethral fever, and the second is of interest in that the fever and chill followed such a very slight irritation, viz., the passing of urine through the urethra.

Many consider this to be of infectious origin, though strong objections can be brought against this view. We know of no other serous or mucous surface which reacts to such slight infection, though in certain conditions of the throat symptoms may be very severe, fever high and the physical appearances not in proportion. On the other hand, if it is to be looked upon as of nervous irritation, objections may also be made. Ziegler, in his last edition of general pathology, cites urethral

fever along with the irritative stages of general paresis, with certain attacks of epilepsy and cases of fright as being examples principally of rise of temperature, following irritation of the central nervous system.

F. J. SHEPHERD, M.D.—The notable point in this case is that the patient died of urethral fever, and not from the cancer. This is a very interesting condition of affairs, and even the simple operation of dilating a stricture has brought on such a state. As to the question of cause, I have no doubt that it is due to sepsis, as urethral fever never comes on till after urine has been passed. There must be some abrasion in the urethra which makes it susceptible to this urine, which no doubt contains micro-organisms, and so acts as an irritant. In many of these cases, fever after the passing of the instrument will be prevented by the use of antiseptics, opium, for instance, and large doses of quinine will prevent urethral fever. I have shown this quite often. After having passed the instrument in a case, there would be later a temperature as high as 105°. Before again passing the sound, the patient would be given a large dose of quinine, when no fever whatever would result after passage of a sound. In this case the urine must have been very septic with such a fistula into the rectum, and it is easy to see that the result of the passage of such infected urine would be grave.

JAMES BELL, M.D.—I do not think that there is the slightest doubt but that the cause of urethral fever is a toxæmia. It always follows a certain combination of circumstances—the passage of an instrument into the deep urethra, and the passage of urine later, presumably therefore the lodgment of blood and urine in contact with the wound. It is a very interesting fact that an open perineal wound with the urine draining out freely is never followed by urethral fever, nor is a lesion of the penile urethra. The presence of blood and urine lying for a short time in contact would seem to be essential to the production of urethral fever. The nervous theory is quite untenable.

ENORMOUS DISTENSION OF COMMON AND HEPATIC DUCTS WITH FACETTED STONES.

JAMES BELL, M.D.—The following is the history of this rather interesting case, the unusual features of which are the enormous mass collectively of stones from the common and hepatic ducts, and that there was absolutely no jaundice at any time. The history is also suggestive. There was first of all the so-called sick headache, then the aching pains between the shoulders; two acute attacks, then nine weeks of distress, then a bad attack and then relief; next a period of three months of comparative ease, then a very bad attack lasting for two days, at the end of which the patient passed 30 facetted stones, and had comparative free-

dom, till six weeks ago, when she had a couple of mild attacks, and now the removal of these 50 odd stones from the common and hepatic ducts and gall bladder.

The patient was a healthy looking, well nourished woman, aged 34, mother of four children, and was admitted to the Royal Victoria Hospital about the 5th May, 1905.

Her history was briefly as follows:—She had suffered all her life from periodical attacks of vomiting and headache, but never had any pain in the abdomen. In January, 1904, she began to have an aching pain in the region of the gall bladder, which radiated up between the shoulders. At the end of a week she had a severe attack of biliary colic, which lasted about three hours, accompanied by chills and vomiting, and was relieved by morphia. At the end of a week she was fairly well, but a week later had another attack similar in character. For nine weeks then she suffered from distress in the upper zone of the abdomen, which incapacitated her for work, and was accompanied by mild attacks of pain. Then another severe attack of biliary colic, accompanied by chills and vomiting, which lasted for several hours, kept her in bed for a few days.

From that time until July, 1904, she was fairly well, with but a few mild attacks of pain. She then had a very severe attack; the pain lasted intermittently for two days, and ceased when she had passed thirty facetted gall stones. From this time until February, 1905, she had, on an average, one attack a month, but no chills. From February to April 21st, 1905, she did not have any attack, then she was seized in the evening, with a severe pain in the same region, which was accompanied by vomiting, and, although she took morphia, she was not relieved until the following morning, and was unable to leave her bed for five days. On the 30th she had a slight attack of pain, but no vomiting.

She never had any jaundice. On cross-examination she admits, at the most, that with the first bad attack, her skin may have been discoloured, but it did not occur to her or to any one who saw her that she was suffering from jaundice.

On the 8th of May she was operated upon. The gall bladder was found thick-walled and cord-like, containing a number of stones, and adherent to the omentum and neighboring structures. On separating the adhesions, the common duct was found much larger than usual, apparently about three-quarters of an inch in diameter, and filled with stones which could be moved upon one another, and extended back in a single line up in the hepatic duct. Gentle pressure was exercised in an attempt

to force them all into the duodenum, but without success. The common duct was incised, and forty-four facetted stones, measuring on an average, perhaps, a quarter of an inch in diameter, were removed from it and from the hepatic duct. The gall bladder was incised and 12 facetted stones removed, after an unsuccessful attempt had been made to force the stones into the common duct. The cystic duct was dilated to about the same capacity as a gall bladder, and was separated from the common duct only by a small ring-like opening, through which a director could be passed into the common duct and on into the duodenum. The gall bladder was removed and the common duct sutured.

During all this past winter, the patient had complained of some pain and tenderness in the appendix region, and a diagnosis of appendicitis had been made. The caecum and appendix were therefore withdrawn and examined, and a concretion was found in the appendix, and evidence of some chronic inflammation, so that the appendix was removed. The concretion was examined with the idea that it might possibly be a gall stone, but it was found to be simply a fæcal concretion. A drainage tube was carried out in the upper angle of the wound from alongside the common duct, and left there for several days, but there has been no evidence of leakage from the incised duct, and the patient has made excellent progress, and is practically well.

F. R. England, M.D.—I would like to ask Dr. Bell whether he sutured the common duct, or whether he used the drainage tube, and packed above it; and whether he found any difficulty in bringing the stones dawn into the common duct. In my own limited work I have sometimes had great difficulty in moving the stones along.

F. J. Shepherd, M.D.—I think this case is most interesting on account of there being no jaundice. Speaking of appendicitis and cholecystitis, I might mention that I operated lately in a case where there was a tumour in the region of the appendix. There was great tenderness, rigidity, and the patient had a temperature of 103°, rapid pulse, 140°, and a history of repeated attacks. I cut down and found a hugely distended gall bladder, cut into it and removed about 30 or 40 stones and an immense amount of glairy mucus. I did not remove the gall bladder in this case, for the condition of the patient did not warrant it. She was a woman of 55, and recovered well. In Dr. Bell's case there was some evidence of appendicitis, in mine the appendix was practically normal, so far as could be made out.

James Bell, M.D.—The incision in the common duct was sutured. I always do this, as it seems to me to be better than to allow large quantities of (possibly) infected bile to drain off. There is always even then

the possibility of a leakage. There was not the slightest difficulty in removing the stones. Removal was quite easy. The dilatation of the duct must have taken place during the nine weeks of distress mentioned in the history; and then, three months later, in an attack of colic, apparently the duct was so overfilled that 30 stones were forced through into the duodenum; but why the remaining stones could not have been forced through I cannot understand. However, after what I considered was a fair and sufficient effort in this direction, I was obliged to incise the duct.

The seventeenth regular meeting of the Society was held Friday evening, June 2nd, Dr. J. A. Macdonald, president in the chair.

HYPERNEPHROMA OF KIDNEY.

F. J. Shepherd, M.D., and B. D. Gillies, M.D.—In presenting this specimen, Dr. Shepherd gave the following clinical history:—The patient, a labourer, aged 61, first complained of shortness of breath coming on about the middle of March, then, later in April, pain in left side of back and frequency of micturition. He had had chronic bronchitis for years; the family history was good. There was an almost constant soreness, with occasional attacks of severe aching pain, generally lasting about an hour. The frequency of micturition began about the middle of April; had to get up twice during the night. Before an attack of pain there was a desire to micturate but inability to do so, though urine was passed freely after the attack. After last attack there was some nausea and vomiting. The urine was alkaline, clear, 1,005, contained albumin, granular and hyaline casts, triple phosphates.

On examination a tumour was found in the left side in the region of the kidney, quite moveable and slightly tender to pressure. I cut down and found a large tumour. I removed the whole mass, tumour and kidney, and the patient is perfectly well at present. The operation was performed by lumbar incision. A little aggravation of his bronchitis occurred owing to the ether. The symptoms are peculiar, as there was never any hæmorrhage.

B. D. Gillies, M.D.—The tumour lies at the lower pole of the kidney, and is about the size of an orange, somewhat lobulated in character and lying immediately beneath the cortex, as these tumours practically always do. The other whitish masses on the kidney are cysts; their white appearance is from the action of formalin. The tumour itself presents at its centre a large cyst, which I take to be originally hæmorrhagic. The tumour shows a yellowish mottled appearance interspersed with reddish areas. On cutting the tumour one comes across

gritty calcareous particles in places. Evidently the tumour is of long standing, and probably has increased in size only recently. The microscopical sections show the typical appearance of a Grawitz tumour. There are the large clear cells arranged in columns, and surrounded by a stroma. On staining with Sudan III., the cells are stained completely. The nuclei in these cells lie to one side, and we have definitely the structure of a Grawitz tumour, and the nature of the cells reminds one at once of those seen in the cortex of the adrenal gland.

J. G. Adami, M.D.—I am interested very specially in the fat staining of these cells. It is an interesting point that Dr. Gillies here brings forward, namely, the typical fat cells, which are at the same time clearly the lining cells of the alveoli of the tumour. This goes to prove that Dr. Bell's case, shown here some time ago, was definitely a hypernephromatous tumour.

James Bell, M.D.—The interesting feature about this tumour is the large cyst in the centre. It may be remembered that when we discussed these tumours before, I suggested that some of these old cysts which we called chronic hydronephrosis, although we could not find any obstruction of the ureter and the contents did not have the character of urine, were probably degenerated from this form of tumour. With regard to the symptoms of hæmorrhage, I think that means the beginning of degeneracy and malignancy. During the pre-malignant stage, there is not likely to be hæmorrhage, while it lasts. This tumour is probably of very long standing, and has begun only recently to take on new growth. All this, together with the cyst in the centre, seems to me to be suggestive of the change that I mentioned on a previous occasion. A tumour of long standing which had never become malignant degenerates in the centre and forms a cyst, which would in time obliterate the whole kidney, and form a large sac of fluid, which, on examination, would probably show none of the characters of urine. It is remarkable how some cases run in groups; this is the third which has been presented here within a very short time.

John McCrae, M.B.—"Some Interesting Autopsy Findings."

D. A. Shirres, M.D.—"A Plea for the Neurasthenic."

Geo. E. Armstrong, M.D.—I am very strongly of the opinion that most of these cases are not recognized, and they turn from the doctor's office to one of these sanitariums where, often with massage, rest or feeding, they are brought around to a comparatively normal condition again. I believe it is the inability to recognize this as a distinct condition, which must be treated, that has led to so many of these sects of healers springing up. They do, very often, get to the bottom of the matter in these cases, and so are able to treat and overcome them.

J. PERRIGO, M.D.—With regard to isolation, it is a most difficult thing to do, especially in the home. Then the obtaining of a nurse in whom the patient can have confidence is another matter, and not one, but many nurses, should be tried until one is found suitable to the patient. We are all apt to slur these cases over, and the title of the paper to-night, "A Plea for the Neurasthenic," is the best that could be given.

D. A. SHIRRES, M.D.—It is absolutely impossible to isolate in private dwellings; and even in hospitals it is often hard to accomplish it. Functional diseases are congenital; people are born that way, and the ætiology of such a condition is pure physical exhaustion. As regards medicine, it is of very little avail; only absolute rest, careful dietry, massage, and keeping away all disturbing influences.

Diphtheria in 1890 proved fatal in full 40 per cent. of cases. In a family of eight children attacked by the malady from three to five were certain to die. Since then I have seen epidemics in which children were attacked by undoubted diphtheria, proved to be such by subsequent palsies without one death, and this, too, in the absence of special treatment. I have knowledge of one case which was deemed miraculous when it happened. A woman aged 95 years slowly and painlessly became blind, I presume from cataract. Having occasion to arouse her neighbours one night, in attempting to do so she fell against the sharp pointed forge-made latch of a door. It penetrated the eye, but some days later the poor woman who thought her eye utterly lost was overjoyed to find her sight in great measure restored. The lens was accidentally extruded. Some years ago a man presented himself to me for advice with respect to an ulcerated cornea. The eye was so badly damaged that I advised its removal. This was declined, and some days later a member of the family wrote enclosing a lump which came out of the father's eye. It was the lens which had escaped through a large opening in the cornea.—Dr. C. P. Bissete in *Maritime Medical News*.

A report of the railway accidents in the United States during the months of October to December, 1904, has been compiled and published by the Inter-State Commerce Commission. During that period 63 passengers and 189 employees were killed and 1,430 passengers and 1,868 employees were injured—a total of 242 persons killed and 3,298 injured in railway accidents. Other accidents to passengers and employees, not the result of collisions or derailments, bring the total number of casualties up to 14,978—951 killed and 14,027 injured.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXXIV. AUGUST, 1905. No. 8.

MEDICAL MEMOIRS OF BYTOWN.

BY

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Ottawa.

Our city was known as Bytown from its foundation in 1826 until 1854, and this affords a very suitable period for consideration. It embraces a generation unknown to us, as our oldest confrére, Sir James Grant, began his career at its close. It was the era of what we know as the "Old School"; the days of the bolus and lancet; the days prior to chloroform; the days of heroic methods, and, I think I may say, the days of heroic men.

Prior to 1826, the site of Bytown was occupied by two or three settlers. In that year Colonel By commenced the construction of the Rideau Canal, and within twelve months there was a population of over two thousand.

The land was swampy and wet, and although malarial fever is unknown to us, we are not surprised to learn that ague in its most severe form became prevalent. Dow's Swamp was much more extensive than at present, and extended from the Rideau to the Ottawa River, by what is now Preston Street; the land around Patterson's Creek, as far as Concession Street, was a swamp; Slater and Maria Streets were a swamp; what is now the Canal Basin was a wet beaver meadow, and from it, extending across lower town to the Rideau River, was low, wet land.

The laborers engaged in excavating the canal were soon attacked by this disease.

John McTaggart, an engineer upon the canal, in a book describing the year 1826-27-28 in Canada, furnishes us with a description of the disease as it then prevailed. He says:—"This is the most prevalent disorder; sometimes it proves fatal, but not generally so. It leaves, however, dregs of various kinds. In the summer of 1828, this sick-

An address delivered before the Ottawa Medico-Chirurgical Society, Nov. 5, 1903.

ness, in Upper Canada, raged like a plague..... At the Rideau Canal few could work with fever and ague; doctors and all were down together."

He suffered from an attack himself, and the following description leaves no doubt as to its character. He says:—"It generally comes on with an attack of bilious fever, dreadful vomiting, pain in the back and loins, general debility, loss of appetite (so that one cannot even take tea, a thing that can be endured by the stomach in England when nothing else can be suffered). After being in this state for eight or ten days, the yellow jaundice is like to ensue, and then fits of trembling. They come on in the afternoon, mostly, with all. For two or three hours before they arrive we feel so cold that nothing will warm us; the greatest heat that can be applied is perfectly unfelt; the skin gets dry, and then the shaking begins. Our very bones ache, teeth chatter, and the ribs are sore, continuing thus for about an hour and a half; we then commonly have a vomit, the trembling ends, and a profuse sweat ensues, which lasts for two hours longer. This over, we find the malady has run one of its rounds, and start out of bed in a feeble state sometimes unable to stand."

Although ague is not now known in this district, it was endemic until the sixties, especially throughout lower town and the Chaudiere, each year lessening in extent and severity.

In 1832 Bytown suffered from an epidemic of Asiatic cholera. This was the year of the first invasion of Canada by this fearful disease. It ravaged Quebec, Montreal, Toronto and nearly all places along the St. Lawrence and Ottawa rivers, which were then the highways of travel. Its onset was sudden and severe. On June 3rd an emigrant vessel arrived at Grosse Isle quarantine station and reported forty-four deaths "from some unknown disease." The emigrants continued their course to their destination, throughout Canada, carrying with them the disease and death. Cholera appeared in Quebec on the 7th; in Montreal on the 10th; Lachine the 11th; Cornwall on the 13th; Prescott the 16th; at Kingston on the 20th, and at Toronto on the 21st. It must have reached Bytown about this latter date, as there is an order, dated June 19, directing Dr. Tuthill, the surgeon in charge of the troops here, to proceed from Bytown to Grenville for duty, as cholera had appeared among the men working on the Grenville Canal. The rapidity with which it increased and its fatality were appalling. At the Quebec Hospital on the 8th there were three cases and two deaths; on the 9th, 16 cases and 8 deaths; on the 10th, 26 cases and 19 deaths; on the 11th, 39 cases and 30 deaths; on the 12th, 66 cases and 43 deaths; on

the 15th, 299 cases and 161 deaths. During the three weeks of June there were buried at Quebec 1,421 persons who had died of the disease. This continued into July and gradually declined. In Bytown it was most severe during the month of July, but I cannot find any details nor any definite facts in regard to the disease itself. It, however, continued here for three months, as on the 22nd September there is an official report of Dr. Stratford—who replaced Dr. Tuthill in charge of the military hospital—stating that the disease had disappeared, and asking for a new building for an hospital. The late Mr. W. P. Lett, in his "Recollections of Bytown," refers to this epidemic as follows:—

"July, 1832.

That was the fatal month and year
When cholera was rampant here:
Malignant Asiatic type,
Which from the book of life did wipe
The name of many a sturdy one
Twixt rise and setting of the sun.
Dread terror brooded o'er the land
While the destroying angel's hand
Smote here and there each deadly blow
Which laid in dust, the proudest low!"

Cholera again invaded Canada in 1834, 1849 and 1854, but failed to reach Bytown a second time.

In 1847 Bytown suffered from its second severe epidemic, that of typhoid fever, generally known as the emigrant or ship fever. The severity of this disease is attested to by the monument at Grosse Isle, erected over the graves of 4,532 dead, and another at Montreal, which marked, at Point St. Charles, the burying-place of about 6,000. Bytown again escaped the intensity of the epidemic, but during the six weeks that it prevailed here, from the middle of June to the end of August, there were 314 deaths. During that summer 3,100 emigrants reached Bytown. When we remember that each death represented a large number of cases of fever, sometimes of weeks in duration, we can form some idea of the demands made for medical attendance, and the enormous task of providing accommodation and caring for the sick. The travel was by means of open boats and barges into which these unfortunates were crowded for several days. The landing place and emigrant sheds were at the canal basin, where Bates and Picket's warehouses stand. The papers of that date refer to the helplessness and misery of the new arrivals, and call attention to the

buildings, dirty and damp from leaking roofs. The approach to the sheds is described as "knee deep in mud and filth." The sheds could not provide accommodation, and many had only such shelter as tents, upturned boats and "improvised buildings" could afford.

The first patients were conveyed to the General Hospital and cared for by the nursing sisters. Later, part of the emigrant sheds were utilized as an hospital, with Dr. Hill in charge. This was quickly found to be inadequate, and the citizens generally, both Catholic and Protestant, united to erect large hospital buildings upon the property in which the General Hospital has since been erected. The onset of the epidemic was sudden, as the first public report on the 19th shows that there were nine cases in the hospital, with 50 cases in the sheds and in the city, and that six deaths had taken place. From that time until September the fever raged unceasingly, and the demand upon the medical attendants and nurses was unremitting. Fortunately no deaths took place among either. Among the doctors many were attacked by the fever, and there is in the Bytown Gazette of August 28th a reference to the serious and almost hopeless condition of Dr. Hill.

It is at this point that we find the first record of a Board of Health. As Bytown was not incorporated, its formation had to come from the Government. On the 10th July there is a proclamation by the Governor-in-Council appointing a Board of Health for Bytown, as follows:—

Rev. S. S. Strong, Rev. Wm. Davie, Rev. Thos. Wardeche, Rev. Wm. Telmon, Simon Fraser, Christopher Armstrong, Daniel O'Connor, Joseph Aumond, Edward Smith, John Burrows, Dr. Hill, Dr. Morson, Dr. Van Courtlandt, Dr. Barry, Andrew Drummond, Mr. Bowles, Geo. Paterson, John Sumner. Sheriff Fraser, chairman; Rev. S. S. Strong, secretary.

It will have been noticed that Bytown was favoured by the presence of hospitals from its foundation. Upon the arrival of Colonel By with his little army of soldiers and workmen, a military hospital was at once erected upon Barrack Hill, near the present site of the statue of Queen Victoria. It was a substantial stone building, and continued in use, as a military hospital, as long as the British troops were stationed here. It contained 20 beds, as I find in the preparation of the building a requisition by Colonel By upon the ordnance department for that number, with furnishings. This hospital was not limited to the care of the soldiers, as I noticed in the diary of the late Dr. Hill reference to an amputation of a leg performed by himself upon a private patient.

In 1845 the General Hospital was established by the Grey Nuns, a number of the members of this sisterhood coming from the Hôtel-Dieu, Montreal, for this purpose. The first hospital was a frame building on the north side of St. Patrick Street, near Sussex Street. This building is still to be seen as Nos. 163, 165, 167 and 169. It was occupied until 1847, when the epidemic of typhoid fever necessitated greater accommodation. A new building was then erected on the property of the present hospital on Water Street. This consisted of large frame buildings, which were situated near the present hospital. They were occupied until 1862, when part of the present stone building was erected, that part which we have known as the hospital until the recent large wing was added. No regular staff was organized until 1859. Dr. Van Courtlandt was in charge until 1850; he was succeeded by a Dr. Robillchaud; then followed in 1851 Dr. Lacroix, in 1852 Dr. Lang, and later in the same year Dr. Beaubien. The first regular staff was organized a year or two later, and consisted of Dr. H. Hill, consulting physician, and Drs. Beaubien and Dr. St. Jean, attending physicians.

The County of Carleton General Protestant Hospital was the outcome of the fever epidemic of 1847. The necessity of providing adequate accommodation for the sick poor had been most evident. Many desired a hospital to be supported by public subscriptions and under the control of the public, and their efforts resulted in the establishment of this hospital. The charter was obtained in 1851, and the hospital was opened in the same year. The incorporators were as follows:—John McKinnon, Geo. Patterson, Wm. Stewart, Hamnett Hill, Arch. Foster, Roderick Ross, Robert Hervey, Jr.; Jno. McCracken, Sen.; Francis Abbott, Thos. Langrell, Thos. Hunton, Rich. Stethem, Geo. B. Lyon, Wm. Hart Thompson, Hon. Thos. McKay, John Thomson, Ed. Malloch, James Peacock, Geo. Hay, Alex. McP. Grant, Wm. Paton, Henry McCormac, John Forgie, Ed. Armstrong, Jas. Rochester, Carter H. Burpee, Ed. Sherwood, Dawson Kerr, Thos. G. Burns. The old stone building recently occupied for contagious diseases was the original hospital, and was retained until 1875.

The earliest staff consisted of Drs. Hill and Van Courtlandt, to which Dr. Sewell and Dr., now Sir James Grant, were shortly added, and they constituted the staff in the closing days of Bytown.

The doctors of those days—what do we know of them? They, who on foot or on horseback trod the paths we now so comfortably follow, have passed away, and, with the exception of one or two who reached our generation, are long since forgotten.

They were not inferior men, not wastrels driven from larger centres. They were for the most part men of culture and education—men brought up in the old land under the most favourable surroundings—men of marked individuality and force of character, who came to share in the future of the new land.

A number who resided here were mere birds of passage. Some military surgeons who came and went with their regiments, others after a few years left for pastures new. A few remained throughout their whole career, and their names are associated with all matters of public welfare.

The first general practitioner here was Alexander James Christie. He came with the arrivals in 1826, and lived here until his death in 1843, in his 65th year. He was the first to secure a town lot in upper town, and lived for some years at the north-west corner of Wellington and Victoria Street. This house may still be seen just falling into ruin. Later, he built a large stone house, nearly opposite to Christ Church Cathedral, which still stands in the rear of 399 Sparks Street.

Dr. Christie was born near Aberdeen, Scotland. His father was the Rev. Alexander Christie, dean of Aberdeen, and rector of Fyvie. He graduated Master of Arts at Marechal College, Aberdeen in 1807, and became a licentiate of the College of Physicians and Surgeons, Edinburgh, in 1811. In the war of 1812 he was a naval surgeon, and was wounded in the thigh when on duty, which resulted in a limp for the remainder of his days. He came to Montreal in 1819, and entered upon the practice of his profession. Here he remained until he removed to Bytown. I cannot find any details as to his professional work, but he acquired an extensive practice, and was esteemed as a physician for several years. In McTaggart's work he is frequently referred to in regard to his professional worth. His college note-books also show that he was a thorough student. Dr. Christie's bent, however, was public life, and he gradually withdrew from medicine to the wider field of journalism, and during his later years he appears to have entirely given up practice. His literary tastes led him to edit, when in Montreal, *The Canadian Magazine,* a high-class monthly publication, and later, in Bytown, he established *The Bytown Gazette*, the first newspaper, which he continued to edit to the day of his death. He filled many offices, and among them I noticed a reference to him as the "Dean of the Guild," which odd title was difficult to interpret until I met in McTaggart a reference to the earliest attempt at municipal government. He says, "Bytown is regularly incorporated by a charter, according to an act of the inhabitants themselves, sanctioned by a

J.P. The officers consist of a provost, two baillies, a dean of guild, a treasurer, ten common councillors, surveyor-clerk, two deacons, and a convenor."

Mr. Lett refers to Dr. Christie as follows:—

"What shall I
Say of this old celebrity?
An M.D. of exceeding skill,
Who dealt in lancet, leech and pill
Cantharides, and lancet, too,
When milder measures would not do;
A polished scholar and a sage,
A thinker far beyond his age,
A writer of sarcastic vein
And philosophic depth, whose train
Of thought was comprehensive, deep,
Peace to his ashes, let him sleep."

James Stewart resided here from 1827 to 1848, the year of his death. His residence was on Rideau Street, near the site of Dr. Grant's recent residence. Dr. Stewart was born in the parish of Ardshan, County Tyrone, Ireland. He was apprenticed in 1806 to Geo. Rogers, surgeon, of Newtown Stewart, in his native parish. In 1810 he went to Dublin, and completed his studies at Trinity College. He entered the army as surgeon, and in 1825 he retired, and came to Canada. He settled near Richmond, and in 1827 moved to Bytown.

Dr. Stewart had a large practice, he apparently being the leading practitioner in Lower Town. We find his name in many prominent offices. He was a member of the first Board of Health, and appointed a coroner May 19th, 1845. Stewart Street was named after him, by Mr. Besserer, in laying out Sandy Hill. Besserer Street after himself; Daly Avenue after his Dominie Daly; Stewart after his doctor, and Wilbrod and Theodore after his two sons. In 1826 Dr. Stewart married the widow of Captain Lett, the father of the late W. P. Lett, and his daughter is the mother of Mr. J. J. McCracken.

There were others who resided in Bytown prior to 1830, but of whom we have not much information. These were Drs. Tuthill, Rankin, Gillie and McQueen.

Dr. Tuthill, an assistant-ordnance surgeon, came on the staff of Colonel By, in 1826. He remained in charge of the military hospital until 1832, when he was removed to Grenville. In October of the same year he returned to England.

Dr. John Edward Rankin, an army surgeon, was evidently in charge

of the workmen on the canal. Later he served in the British army during the Crimean War. In 1854 he returned to Canada and settled in Picton, Ont., where he died in 1878, aged 81. He received his M.D., St. Andrews, and M.R.C.S., Edinburgh, in 1825, and the license of the Upper Canada Medical Board in 1829. This latter was granted to "J. E. Rankin of the Rideau Canal."

Lett describes him:—

> "And Dr. Rankin, there he goes,
> With solemn brow, and turned-out toes,
> Upon his mottled, bob-tailed horse,
> Whose canter said the patients worse
> Or better, as the trusty steed
> Did indicate by passing speed."

Dr. J. D. Gillie, a M.R.C.S., England, lived near the south-west corner of Sparks and Lyon Streets. The building still remains as 342 Sparks Street. He was an intimate friend of Dr. Christie, and Mr. John Christie has in his possession a quaint old silver-mounted snuff-box, which was presented to Dr. Gillie to his friend Dr. Christie. He resided here and continued in active practice up to the time of his death, which took place late in the thirties, but there is nothing to recall his life and work.

Dr. Thomas Fraser McQueen was born at Edwardsburg, Ont., June 5th, 1805. He was the son of Captain McQueen, of the Nova Scotia Fencibles. He graduated at Glasgow, and obtained a license to practice from the Upper Canada Board in 1827. He commenced practice at Ottawa. During the cholera epidemic he was in charge of the cholera sheds from Cornwall to Brockville along with Dr. Scott, of Prescott. Later he settled in Brockville, when he acquired a large practice, and died June 6th, 1860. He married a daughter of Lt.-Col. Fraser, M.P., of Fraserfield, who survives him and resides in Ottawa.

Edward Van Courtlandt commenced practice in 1832, and resided here for 43 years. His father was an officer in the Imperial service. He was born in Newfoundland in 1805, but moved as a child to Quebec. There he was educated at a private school kept by the Rev. D. Wilkie, and at the age of 14 commenced the study of medicine with a Dr. Hacket. He completed his medical course at London, and passed the examination of the Apothecaries Hall and the Royal College of Surgeons in 1827. He was then appointed librarian to the Royal Medical and Chirurgical Society of London, which office he retained for two or three years. He then returned to Canada, and settled at Bytown. He resided in the large stone house which is now 394 Wellington Street.

It was, when erected, much more imposing than the ordinary houses of these days, and was regarded as a mansion, but the quaint old stone steps and other odd architectural designs have been removed during recent years.

Dr. Van, as he was generally known, acquired a large practice, and his reputation spread far and wide. His patients looked upon him as a man of remarkable skill. He was, however, most erratic, and even careless in his care of patients, and many who would not depend upon him as a regular attendant eagerly sought him as a consultant. He was odd and eccentric in his manner and dress—brusque, sharp and even rough in his speech. He had been a student under Abernethy, and was most pleased when likened to that celebrated surgeon. He was impetuous and quick-tempered; ever ready to imagine a slight and equally prepared to resent a fancied grievance. Beneath the rough exterior there was a kind and sympathetic nature, and many instances are recited of his kindness and generosity to the poor. He himself worked hard and long, yet acquired but little of this world's wealth.

He was known to old and young alike, and I doubt if there was any one residing here in his day who was not familiar with the old doctor. My own most distinct recollections are of his rapid and sprightly walk, and his habit of snatching boys' caps as he passed them by. He was called the old doctor, but he never looked old, his clean shaven face and dark hair masking the advance of years.

Dr. Van Courtlandt filled numerous official positions, and took great interest in all that affected his profession. For many years he was the senior doctor, and was always ready to help his confrères when his assistance was required. He was the first surgeon to the General Hospital, and had full charge of that institution for many years. He was consulting surgeon at the Protestant Hospital, and held that position at the time of his death. He was surgeon to the gaol, coroner, and surgeon to the Field Battery.

In addition to his professional reputation, he was known as a geologist of marked ability, and contributed many papers and lectures upon this subject. He studied the mineralogy and palæontology of this district, and accumulated a really valuable collection, for which he had fitted up a room in his residence.

He died in May, 1873, and was buried with military honours in the cemetery at Hull.

In Dr. Hamnett Hill, so recently our confrére, we were brought in contact with this past generation. He lived with the earliest doctors, and a vigorous life brought him to our own times. For fifty-seven

years he lived in this city a loyal member of the profession, and one in whom we can find our ideal. Always dignified and in earnest, when in professional duty, there was no levity or frivolity, but when met with socially, no one was gifted with more life and humour. How vividly we can recall his presence during his last years; his vivacity and wit always added to an evening's recreation, and I can fancy no better wish than that same light-heartedness may follow us into "the sere and yellow leaf." His time and energies were always at the service of the profession. He was never asked in vain to assist in the affairs of medicine—were it hospital questions, a medical society, or a question of public health—he was ever ready with his advice and experience. Dr. Hill eschewed politics and public life. Once only he stepped into the arena, and on the solicitations of friends was a candidate for the mayoralty—and, I think fortunately, was defeated by a few votes.

He was always a busy man, and his recreation was work in another line. When young his spare hours were devoted to amateur mechanics, his workshop and lathe were his amusements, and many of his instruments and appliances were of his own make. In later years he amused himself with painting and sketching, and in his seventies he was an earnest pupil at the Art School.

Dr. Hill was born in London, Eng., December 15th, 1811. His father was John Wilkes Hill, surgeon. His medical studies were pursued at the London Hospital, and he took his M.R.C.S. in 1834. For three years he practiced at Brighton, and in 1837 he came to Canada. He lived in March until 1841, when he took up his residence in Bytown. For many years he lived in the stone house, now 425 Wellington Street, and later removed to his late residence in Wellington Street, since destroyed by fire.

He acquired an extensive and lucrative practice, and was much esteemed as a consultant. He prided himself upon his surgical skill, which partook of the boldness and dexterity of pre-anæsthetic days.

Dr. Hill was one of the incorporators of the Protestant Hospital, and for some years after its foundation was attending physician, and upon the appointment of Dr., now Sir James Grant, he became consulting surgeon. On the organization of the Medical Board he was elected chairman, and retained this office until 1879, when he resigned on account of a family bereavement. He was also consulting surgeon to the General Hospital and to St. Luke's Hospital, which he assisted to establish. He was the first president of this Society on its formation in 1874, and was re-elected in 1875. I also find that he was gazetted surgeon to the Battalion, Carleton in 1847.

Samuel John Stratford, M.R.C.S., Eng., received his medical education at St. George's and Westminster Hospitals, London. He became assistant surgeon to the 72nd Regiment Highlanders. In 1831, he retired, and, obtaining a license in Upper Canada, he settled in Lower Town. In 1832 he was placed in charge of the Military Hospital during the cholera epidemic. He remained here until 1836, when he moved to Woodstock and later to Toronto. He became a member of the Upper Canada Medical Board in 1838. H also was editor of the *Upper Canada Journal of Medical, Surgical and Physical Sciences,* Toronto. He lectured in Rolfe's Medical School, and was a professor in Trinity Medical School. He died in New Zealand. His father was an army surgeon, and on retiring practiced his profession in Brockville.

Dr. Alfred Morson was educated at Guy's Hospital, and became M.R.C.S., Eng., in 1834. He came to Bytown in 1836, and was appointed to the medical charge of the garrison at Bytown, which position he retained up to 1852. He removed to Montreal, and then to Hamilton and Toronto.

Dr. Frederick Morson was a brother to Alfred, and came to Bytown in 1839, remaining in practice here for five or six years. He then moved to Montreal, and finally settled in Niagara.

Dr. Stephen Charles Sewell came to Bytown in 1852, and remained here until his death in 1865. He was appointed consulting surgeon to the General Hospital and to the Protestant Hospital. He was a son of Stephen Sewell, of Quebec, Solicitor-General for Canada. He studied at Edinburgh, and obtained the M.D. of the University of Edinburgh and M.R.C.S., Edin. In 1836 he commenced practice in Montreal, and was appointed lecturer at McGill on Materia Medica, and later on clinical medicine, and attending physician to the Montreal General Hospital. On account of ill-health, he resigned these positions and removed to Ottawa. He resided in the house formerly occupied by Dr. Hill on Wellington Street, next to the Perley Home for Incurables.

There were many others of which there is little to be learned. Among the earlier were Drs. Barry, Robinson, O'Hare and Holmes; later, Lecroix, Robillchaud and Beaubein. Of Edward Barry Lett says:—

There's Edward Barry,
Who in his prime did combine
The medicine and legal line,
Exhibiting as his degree
Upon his card, J.P., M.D.

He gave to Bytown's sporting men
Such fox-hunting as we ne'er again
Shall see. . . . . .
That hunt the public health to save
Was the best prescription e'er he gave.

Gentlemen, I have to thank you for your attention to these fragmentary sketches. It is to be feared that they may not have proved as interesting to you as they have proved to myself. It might have been better had I selected a single person or an isolated event and treated it fully, but this must be left for the future. The field is new, and the records of these days are scattered far and wide. My purpose has been to prepare a foundation to which others may add. Once begun, other sources of information will appear, and much stronger light will be thrown upon incidents and people of those days. Our Society should be the repository for such matters (and we would do well to gather all we can). We have not yet our faculty building, nor even our meeting room, but it is not too soon to begin a collection of likenesses, not only of those that have passed away, but also of those that are here. I should like to see on our walls, alongside Christie and Van Courtlandt and Hill, the faces of Wright, Church and Klock.

We cannot but respect and think kindly of all who have worked before us. Medical knowledge is advancing year by year, and great changes take place in the treatment of disease; but the old practitioner, visited daily as we do—he brought life into the world and watched it depart—his patients came and his patients went—he won their thanks or gained their frowns—and practice had the same effect on him as it has on us. Some were successful, others failed, and the same old story is repeated generation after generation. It is—

The same old work, the same old skoff, the same old dust and sun;
The same old chance that laid us out, or winked an' let us through;
The same old life, the same old death. Good-bye, good luck to you.

PUERPERAL INFECTION; A REPORT OF SIX CASES ILLUSTRATING ITS VARIED CHARACTER.

BY

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Puerperal infection, in spite of the increase in our knowledge of prophylaxis, is still the cause of the majority of deaths occurring in pregnancy and the puerperium, and remains therefore one of the most

frequently discussed topics in obstetrical literature. Although the pathology of the simpler or so-called "pure" forms of infection has been thoroughly described, the varied manner in which the disease may manifest itself has not been so generally understood. It seems therefore justifiable to add, to a subject of such perennial interest, a report of several cases studied both clinically and pathologically.

Puerperal infection differs from all other bacterial infections in that it occurs in organs whose anatomical relations and blood supply have been altered temporarily. This is of as great importance in determining the extension of the infection as is trauma in favouring the original infection. Auto-infection is to be considered also, not only as infection from organisms existing in some part of the genital canal, but also as infection which may be carried to the genitalia from some pre-existing focus in a remote part of the body. Two cases of auto-infection from foci outside the genitalia are here reported. Intercurrent bacterial disease primarily non-genital must also be considered a factor in the causation of puerperal infection.

A few words concening terminology may not be out of place, for the obstetrician is notoriously lax in his use of terms, e.g., the frequent use of the term septicæmia when only a toxæmia exists.

In any discussion of infection we must consider, on the one hand, the local lesion, and on the other the secondary manifestations. The local lesion is due to the toxic substances elaborated by micro-organisms at the point of invasion; at the same time, these soluble substances pass into the general circulation and cause constitutional symptoms. The local lesion may be an abscess, a urethritis, or a pneumonia, etc.; in puerperal infection it is usually an endometritis. The constitutional symptoms constitute a toxæmia and not a septicæmia. The latter results only when the micro-organisms themselves enter the blood stream, and are distributed to all parts of the body. Needless to say, an absolute diagnosis between toxæmia and septicæmia can be made during life only by the use of blood cultures. If, with the septicæmia, we have the development of secondary abscesses, the condition then becomes a pyæmia. Pyæmic manifestations must, however, be distinctly separated from lesions of adjacent organs due to direct extension by continuity or contiguity. Thus we may have a streptococcus or other form of endometritis with toxæmia or with septicæmia; in the course of the latter pyæmia may develop; or with either of the three conditions we may have local lesions due to direct extension of the infection. These terms include all possible forms of puerperal infection, but unfortunately, among surgeons and obstetricians, the terms toxæmia and septicæmia do not receive their exact values.

Another stumbling block is the term sapræmia so frequently used for toxæmia. Toxæmia is now usually regarded as an intoxication resulting from the absorption of bacterial products. It is possible that an intoxication may be caused by substances elaborated in the bacteria-free destruction of tissue, but there is little positive evidence to this effect. By sapræmia, obstetricians usually mean constitutional disturbances, as rise of temperature, pulse, etc., accompanying the retention of the products of conception. These symptoms are supposed to be due to the decomposition of the dead tissues by saprophytes with the production of the so-called "putrid endometitis." As the bacteriology of the puerperium has been more carefully studied, these cases of putrid endometritis were found to have as a basis infection with those forms of pathogenic bacteria more difficult of isolation. This is shown by the recent investigation of Little, who found the Bacillus ærogenes capsulatus, to be not infrequently present in the uterus; and also by the recent studies of gonococcus infection by Stone and the writer at the New York Lying-In Hospital. It was found that the presence of the gonococcus explained a number of cases of toxæmia with constitutional symptoms, which would ordinarily have been classed as sapræmia. It would seem advisable therefore to drop the old term sapræmia, and group these cases as toxæmia from bacterial infection.

The cases [1] here collected illustrate some of the more unusual forms of puerperal infection both as regards the variety of causative organisms as well as the pathological lesions.

CASE I.—Streptococcic endometritis with septicæmia—B. aerogenes capsulatus infection.

Records of New York Lying-In Hospital; Case No. 7099; Primipara; aged 25; Pregnancy of seven months' duration.

History.—Vomiting of pregnancy was moderately severe at fourth month; but improved towards the sixth. Two days before admission the patient induced labour by passing a button hook into the uterus, rupturing the membranes. Labour pains began shortly after and the child was partially expelled on the evening of the second day. On entering the hospital the os was dilated and the child delivered. The uterus was irrigated and packed with iodoform gauze. Vomiting was incessant at entrance, and there was slight jaundice. The temperature on admission was 102; pulse 140. On the following day the gauze was removed. Patient was restless and noisy, but rational; vomiting severe; no abdominal tenderness. Third day, slight stupor; vomiting and jaundice increased. Fourth day, profound coma; vomiting severe; vomitus stained with blood. Fifth day, comatose condition continues; incessant vomiting; conjunctivæ deeply bile stained and hæmorrhagic. Died.

Urine.—Analysis showed high specific gravity, a trace of albumen, a few blood cells, granular and hyaline casts and leucin and tyrosin.

[1] I am indebted to Drs. Lipes, Lochner and Happel for the clinical histories of the cases from the Bender Laboratory, and to Drs. Painter and Stone, late attending Physicians to the New York Lying-In Hospital, for permission to report two cases which occurred during my service under them.

Little, Bull. Johns Hopkins Hospital, April, 1905.

Blood cultures were negative. Blood counts showed 3,950,000 red cells, 75 per cent. hæmoglobin, and 18,000 to 19,000 leucocytes. The latter were divided into small lymphocytes, 7.5 per cent.; large lymphocytes, 6.5 per cent.; polymorphonuclears, 86 per cent.

Post-mortem Examination,[1] by Dr. Martha Wollstein. The autopsy was performed six hours after death.

"Body is that of a medium sized woman, fairly well nourished, subcutaneous fat small in amount. There is slightly marked general icterus and a group of small subcutaneous hæmorrhagic spots just below and to the left of the umbilicus.

Liver.—Not decreased in size. In the mamillary line it extended to the free border of the ribs. Weight is 1900 grammes. The liver, as a whole, was light yellow in colour and firm in consistency. On the inferior surface of the right lobe there were areas which were softer than the rest of the liver substance, and a brighter yellowish green in colour. The lobules were indistinct everywhere, the central veins being plainly visible, apparently distended, but the lobules around them are not clearly outlined. In the softer areas the lobulation is almost entirely lost. Glisson's capsule is smooth and glistening, with many small hæmorrhages in it and beneath it. The connective tissue septa are apparently not thickened. The branches of the portal veins are, for the most part, empty. Gall-bladder contains green, fluid bile; the ducts are patent. The blood in the portal veins foams, but there are no holes in the liver substance.

Spleen.—Weighs 200 grammes. Crackles on pressure. Dark red in colour, soft, almost diffluent, and riddled with small holes.

Stomach.—Contents dark brown and fluid. The mucous membrane is covered with blood stained mucus and shows punctate hæmorrhages, most numerous on the posterior surface.

Kidneys.—Normal in size; capsules free; cortex not thickened; markings blurred. In the boundary zone are many small hæmorrhagic areas, contrasting sharply with the grey cortex and medulla.

Bladder.—Punctate hæmorrhages of the mucosa near the trigone.

Uterus.—16 cm. in length. Muscle is flabby and emphysematous, and peritoneal surface is normal. The endometrium is greenish black in colour and gangrenous from the fundus to the lower border of the cervical lips. Attached to the mucosa at the fundus, to the left of the median line, is a mass of placental tissue which is gangrenous.

Anaerobic cultures were made from the liver, spleen and uterine wall. The bacillus aerogenes capsulatus grew from each of these organs.

Aerobic cultures from the liver and endometrium, gave growths of streptococci.

Diagnosis of acute yellow atrophy of liver confirmed by histological examination.

Pathological Diagnosis.—Puerperal uterus; gangrenous and emphysematous endometritis; general infection with the streptococcus pyogenes; acute yellow atrophy of the liver; pulmonary œdema; chronic pleurisy.

CASE II.—Bender Laboratory Records. Autopsy 0-247. Double pyonephrosis—Pyo-ureter—Staphylococcus pyogenes aureus—Septicæmia.

Clinical History.—Primipara. Patient was sent to the Albany Hospital for irrepressible vomiting when 8½ months' pregnant. She was much emaciated and weak. Temperature was 101-102 at night and usually subnormal in the morning. The vomiting, which had persisted for two weeks, was controlled by purgatives, dieting and saline enemata; but the fever persisted. The urine showed a few pus cells, but no albumen. Patient was delivered at term of a dead child. Temperature went higher after delivery, and the patient died on the same day.

Post-mortem Examination, by Dr. George Blumer.

Left Kidney.—Measures 11 x 5.5 x 4 cm. The capsule strips readily. The surface of the kidney is pale and is dotted with purulent foci, which extend into the kidney substance. On section kidney tissue is exceedingly pale. Occupying

[1] Only those portions of the autopsy protocols pertinent to the subject under discussion are given.

the pyramid in several places are small abscess cavities from 2 mm. to 12 mm. in diameter. These abscess cavities are surrounded by a distinct hæmorrhagic zone. In some of the pyramids near the point can be seen minute pin-point opaque areas extending into the tubules. The pelvis of the kidney contains a small quantity of purulent material, and the surface is somewhat hæmorrhagic. The glomeruli are visible and the cortex measures 8 mm. in thickness. In numerous areas the infection can be seen extending up along the tubules. There is marked cloudy swelling. Left ureter slightly dilated.

Right Kidney.—Measures 11 x 6 x 4 cm. Capsule strips readily; surface is pale and is studded with numerous small abscesses. There is one retention cyst, 1 cm. in diameter, on the surface. On section, the tissue of the kidney is very pale and is thickly studded with small abscesses which appear to extend up along the tubules and in places show large areas of necrosis. As in the other kidney the abscesses are surrounded by a hæmorrhagic area. The cortex measures 6 mm. The pelvis of the kidney is much dilated, contains a small quantity of purulent material and its mucosa is markedly hæmorrhagic.

Bladder.—Contains about 60 c.c. of turbid straw coloured urine; beyond some congestion, its mucous membrane is of normal appearance. The right ureter, just where it passes over the pelvic brim, becomes markedly dilated and at a point near the kidney measures 2.75 cm. in diameter. Throughout the dilated portion the mucous membrane is dotted with hæmorrhages, and in some places clots have formed. On the left side, 12 cm. above the ureteral orifice, the ureter is dilated and measures .75 cm. in diameter, while near the kidney it measures 1.75 cm. in diameter. The mucous membrane is hæmorrhagic in places. Both ureters in the region of their entrance into the bladder are of normal appearance.

Uterus.—Measures 16.5 x 11 x 8 cm. There are lateral lacerations of the cervix most marked upon the right side. The fundus of the uterus contains a considerable amount of clotted blood. The interior is much roughened and the surface is exceedingly irregular. Uterine muscle is of normal appearance. The vagina is much dilated and the mucous membrane shows numerous small hæmorrhages. Ovaries and tubes are normal. Placenta is normal.

Microscopic Examination.—Kidneys.—The greater portion of the substance shows marked cloudy swelling. Scattered here and there through the organ, usually along the group of tubules, are areas in which the kidney substance is densely infiltrated with cells, both polynuclear and small round cells. Some of these cells are in the lumen of the tubules, others are between the tubules. Associated with these lesions is a certain amount of hæmorrhage between the tubules and a considerable degree of necrosis of the kidney cells. In some places there has been an extensive breaking down of the kidney substance with the formation of abscesses. The vessels, are, in places plugged with bacteria.

Bacteriological Examination.—Cultures were taken from heart's blood, liver, spleen, both kidneys, pericardium and a mesenteric gland.

Cultures from heart's blood, liver, spleen and both kidneys showed a coccus in pure culture which liquefied gelatin, coagulated and produced acid reaction in milk and produced a marked yellowish growth on potato, corresponding in all particulars to the staphylococcus pyogenes aureus.

Pathological Diagnosis.—Infection of both kidneys with cloudy swelling. Dilatation of both ureters with pyoureter. Slight pyonephrosis. Acute splenic tumour. Cloudy swelling of liver. Swelling of mesenteric glands. Slight arteriosclerosis. Persistent Meckel's diverticulum. Enlarged uterus just after labour. Infection of kidneys with staphylococcus pyogenes aureus, associated with general infection of blood and organs with the same organism.

CASE III.—Bender Laboratory Records. Autopsy No. 0-554. Peri-uterine thrombophlebitis—Cerebral thrombosis with purulent meningitis—Pulmonary embolism—Streptococcus infection—Pyæmia.

Clinical History.—Patient had an uneventful pregnancy until the seventh month. She then suffered from angina, which was relieved in two days by treatment with gargles and nitrate of silver applications. She still suffered however from headache, photophobia and restlessness; evening temperature elevated from 1 to 2 degrees.

Two weeks later, when seven and one-half months pregnant, premature labour occurred without intervention. At the termination of labour immediately after the placenta had been expelled spontaneously, the patient suddenly complained of breathlessness, became cyanotic and dyspnœic, and died in less than two minutes.

Porst-mortem Examination.—By Dr. George Blumer.

Heart.—Right side contains fluid blood and postmortem clots. Endocardium and valves are normal and the average thickness of muscle of right ventricle is 4 mm. Left side contains postmortem clots; endocardium, valves and coronary arteries are normal. Auricular appendages are empty and foramen ovale is patent but is protected by a semilunar flap. Heart muscle is pale and opaque.

Left lung.—Is firmly bound down by old adhesions. It is crepitant and, on section slightly œdematous and congested throughout. Two of the larger pulmonary veins contain ante-mortem thrombi. Bronchi show slight congestion of the mucosa.

Right lung.—Is slightly adherent to the apex. It is crepitant and, on section the upper and middle lobes are slightly congested and œdematous. The lower lobe is markedly so. Vessels of this lung appear free from clots. Bronchial glands are slightly enlarged and pigmented.

Left kidney.—Capsule strips readily, leaving a smooth surface. On section the cortex is markedly swollen and pale, the markings are indistinct and glomeruli are scarcely visible. Veins contain fresh thrombi and a fresh thrombus is present in the main branch of the renal vein.

Uterus.—Measures 14 x 10 x 5.5 cm. The musculature is flabby, averaging 1.5 cm. in thickness, and endometrium is rough, a mass of adherent material, with the appearance of blood clot is in the fundus over an area 5 cm. in diameter. The peritoneal surface is smooth. The tubes and ovaries are normal. Vaginal tissue about the cervix is cyanotic and shows a few hæmorrhages. Veins in the broad ligament contain red and mixed thrombi, which are numerous on the left side.

Brain.—Shows, on the surface, three distinct areas of softening. The largest is on the right side of the vertex in the region of the first frontal convolution, the second is on the right side in the region of the upper part of the parietal lobule, and the third is on the left side, just anterior to the fissure of Rolando, involving the ascending frontal convolution.

In connection with all these areas beneath the pia-arachnoid there are collections of yellowish green pus. The longitudinal sinus contains parietal antemortem clots and lateral sinus is free from clots.

Bacteriological Examination.—Cover slips from the uterus show cocci in chains, not decolourizing by Gram, and bacilli decolourizing by Gram.

Cultures from spleen, bile and meninges were sterile. Cultures from uterus and left renal thrombus show the streptococcus pyogenes and the proteus vulgaris.

Pathological Diagnosis.—Thrombosis of veins of left broad ligament and left renal veins. Thrombosis of branches of the right pulmonary veins. Thrombosis of the longitudinal sinus. Multiple thromboses of cerebral vessels with areas of softening. Purulent meningitis over these areas. Chronic adhesive pleurisy on left side. Cloudy swelling of heart, liver and kidney. Acute spenic tumour. Puerperal uterus.

CASE IV.—Record of New York Lying-in Hospital. Case No. 8419. Suppurative salpingitis—Lymphangitis—Septic endometritis—General suppurative peritonitis from infection with the streptococcus, the gonococcus and the colon bacillus—Septicæmia.

Clinical History.—Primipara, aged 18.

Previous History.—Six days before entering hospital labour pains set in and patient was delivered of a seven months child by an outside physician. The child lived one hour. Bowels moved with an enema on the second day, and at this time there was "fever" and abdominal pain. On sixth day she was sent to the hospital, having suffered with pain in the lower abdomen and "fever" during this time.

Condition at entrance on sixth day postpartum.—Pulse 110, high tension, regular. Temperature 104, no abdominal tenderness. No rigidity. Uterus seems well involuted. Vaginal examination—many vulvar condylomata, profuse purulent vaginal discharge. The uterus is anteverted, soft, tender and fixed. Os admits one finger, no placental masses are felt. On palpation in the lateral fornices, extreme tenderness is elicited. Left appendage seems negative; but on the right there is a moderate sized fixed mass. No mass or swelling is found in the cul-de-sac. Rectal examination corroborates vaginal. ,

Smear taken from inside the cervix shows gonococci and streptococci. Culture from the uterus showed streptococci in pure culture. Blood culture on the sixth day was negative. Leucocyte count was 29,000, of which 90.5 per cent. were polymorphonuclears. Urine showed a trace of albumen with hyaline casts. Leucin and tyrosin were absent. The diagnosis at this time was septic endometritis with gonorrhœal salpingitis.

On the seventh and eighth days her condition was unchanged. Bowels moved freely. Evening temperature was 102 with morning remission. There was slight pain in the hypogastrium. On the eighth day temperature was 103 in the evening and pulse 100. No abdominal rigidity was shown.

On the ninth day, at 4 a.m., after a large bowel movement, patient complained of sudden severe abdominal pain and difficulty in breathing. Pain was referred to the epigastrium and right lumbar region. It was peristaltic in character, intermittent and intense. The tongue was dry, and there was slight vomiting of clear, green fluid. Pulse rose to 120, was thready and of high tension. Abdomen was very markedly rigid and tender. Expression was anxious and patient cried out with pain.

Vaginal examination showed slight fullness in the cul-de-sac with marked tenderness, otherwise was as before. Leucocytosis at this time was 11,000, of which 89.2 per cent. were polynuclears.

Patient was put on the operating table four and one-half hours after onset of acute pain and rigidity. Laparotomy was done by Dr. Stone under ether anæsthesia, in Trendelenberg position, with median incision.

On opening the peritoneum large quantities of sero-purulent fluid escaped. Severe general peritonitis was present with marked congestion of the visceral blood vessels. Peritonitis was most intense in the pelvic region. Appendix was adherent to right tube and ovary. Right tube was large, much thickened and inflamed, and covered with tags of adhesions. Pus exuded from the fimbriated end. There were the remain of many recent adhesions in the region of the right tube and in the right side of the pelvis. Sero-purulent fluid had penetrated to all the interstices of the intestines. Right tube and ovary were removed with the uterus, leaving the left tube and ovary and stump of cervix. Pus exuded from the cut surface of the broad ligament. The entire peritoneal cavity was flushed with hot saline. Iodoform gauze drain was passed through the cervix and abdomen closed by through and through silk work gut sutures, as patient's condition was poor. Death occurred after 4 hours without rally.

Blood taken from vein just before operation and placed on serum agar and ascitic agar yielded no growth.

Cultures taken at operation from the peritoneal pus, and from the fimbriated end of the tube showed B. coli and streptococci; from the inner end of the tube, no growth; from the uterine cavity, no growth.

CASE V.—Records of the Bender Laboratory. Autopsy, o-756. Acute suppurative endometritis—Puerperal infection (post-abortive) with pneumococcus—Pyæmia.

Clinical History.—Aged 20.. Para II. 4 months pregnant. Abortion was induced by a midwife by means of a catheter. Infection resulted. She was admitted to the Albany Hospital and the uterus was curetted and packed; but she died three days afterwards. Temperature was 102 at admission and ran from 102-103 until death from peritonitis.

Post-mortem Examination.—By Dr. Stanton.

"*Abdominal Cavity.*—All peritoneal surfaces are covered with a sticky greyish yellow purulent exudate which is thin between adherent surfaces of peri-

toneum, but reaches 1 to 4 mm. in thickness over the peritoneal surfaces held apart by collections of fluids. Omentum completely covers intestines, its free border reaching down into the pelvis where it is covered with a thick layer of fibrino-purulent exudate. The pelvis and dependent portions of the abdomen are filled with a yellowish turbid fibrino-purulent exudate. The subperitoneal blood vessels are everywhere deeply injected. The urinary bladder is distended reaching 3 cm. above the pubis. Appendix measures 8.5 cm. in length, has a free meso-appendix, extends downward and inward over the brim of the pelvis and is negative, except for exudate on the peritoneal surface.

Uterus and appendages.—Are covered with a thick layer of fibrino-purulent exudate. The fimbriated extremity of the left tube is turned upward, is deeply congested and exudes a thick creamy pus when the tube is compressed. Right tube extends downward, backward and outward, the fimbriated extremity lying behind and below the ovary, and is embedded in a thick layer of the fibrino-purulent exudate. Both tubes are deeply congested, somewhat swollen and on pressure a thick cream coloured pus can be forced from both abdominal and uterine ends. Mucosa of the tubes is deep red in colour and is covered with cream coloured pus, ovaries are deeply injected and covered with a fibrino-purulent exudate.

Uterus.—Is enlarged, globular in shape, extending upward to the level of the promontory of the sacrum, is distinctly retroflexed. Cervix measures 2.5 cm. in diameter and projects 1 cm. into the vagina. Cervical canal is dilated, easily admits one finger and measures 3 cm. in length; external os is deeply congested and covered with a yellow purulent material. Uterine cavity above the internal os measures 7.5 cm. in length; the muscle is firm; the inner surface of the uterus presents a greyish granular surface mottled by areas of bluish black and deep red discoloration. There is no evidence of endometrium.

Vagina.—Is negative, except for congestion and bluish discoloration in the region of the cervix. This is especially marked in the posterior fornix.

Right common iliac vein contains several greyish granular masses 3 to 5 mm. in diameter, the remains of softened thrombus.

Bacteriological Examination.—Smears from the peritoneum show numerous cocci in pairs and short chains with numerous bacilli of varying morphology.

Cultures from peritoneum, liver, spleen and kidney show numerous minute translucent slightly raised colonies on agar from which are obtained lanceolate diplococci staining by Gram's method. Sub-cultures from these minute colonies sterile after 48 hours. On original cultures were also moist, semitranslucent colonies 1 to 3 mm. in diameter, from sub-cultures which was obtained a gas-producing bacillus which coagulated milk with acid reaction.

Cultures from the uterus showed a large number of organisms which were not worked out.

Microscopic Description.—Uterus—Mucosa has been removed. Muscular walls show narrow zones of necrosis adjacent to uterine cavity. Small blood vessels near cavity are thrombosed. Considerable leucocytic infiltration of all tissues with scattered masses of bacteria.

Tube is markedly congested and lumen is filled with pus. Serous surface is covered with an exudate of fibrin and leucocytes. All coats are infiltrated with polynuclear leucocytes and lymphocytes. Fibroblasts with a few new-formed blood vssels are found beneath the exudate on the peritoneal surface. Gram-Weigert stains show numerous cocci in pairs and short chains, and long rod shaped bacilli.

Pathological Diagnosis.—Acute suppurative salpingitis and endometritis. Acute fibrino-purulent peritonitis. Mural thrombus of right heart. Congestion and œdema of the lung with hæmorrhages. Slight cloudy swelling of liver and kidneys.

CASE VI.—Bender Laboratory Records. Autopsy, 0-198. Acute hæmorrhagic endometritis.—Acute suppurative peritonitis and pericarditis—Septic pneumonia with pleuritis—Staphylococcus pyogenes aureus infection—Pyæmia.

Clinical History.—After an apparently normal pregnancy patient was delivered by a midwife and entered the hospital on the 8th day post-partum, very

profoundly infected. Death occurred 36 hours after, her condition being so bad, that nothing could be attempted in the way of operative measures.

Post-mortem Examination.—By Dr. Blumer.

"Peritoneal cavity contains about 300 c.c. of turbid purulent fluid. Both layers are dull, injected and covered with a small amount of fibrin. Intestinal coils and omentum are adherent to one another by fresh delicate adhesions. Appendix is normal. Retrosternal glands are not enlarged.

Pericardial Cavity.—Is distended, with 250 c.c. of turbid yellow fluid. Both layers are dull and slightly injected.

Left Pleural Cavity.—Contains about 1,000 c.c. of turbid serous fluid. Right pleural cavity also contains turbid fluid.

Left Lung.—Pleura is covered by layers of fibrin and lymph. Both lobes are crepitant and on section are congested and œdematous. Bronchi are congested and covered with muco-purulent fluid. Blood vessels are normal.

Right Lung.—Is bound down by fresh adhesions on all its surfaces. Pleura is also covered by layers of fibrin and lymph. Lung is less crepitant than normal and lower lobe feels quite solid. On section lower lobe shows broncho-pneumonic areas and elsewhere lung is congested and œdematous.

Uterus is enlarged, sub-involuted and measures 12 x 8 x 5 cm. Peritoneal covering is injected and covered with a plastic fibrinous exudate. Consistency is soft, os is patulous and escaping from it is a large amount of sticky blood stained material. Tubes and ovaries are apparently normal. The endometrium is markedly congested and shows a few discrete sub-mucous hæmorrhages, the mucosa is covered with tenacious foul mucoid fluid. Uterine walls are 2 cm. in thickness. Mucous membrane of the vagina is congested and shows a few hœmorrhagic points.

Bacteriological Examination.—Smears from fluid of pleura, pericardium and peritoneum contain many polynuclear leucocytes with round cocci generally single which do not discolourize by Gram's.

Cultures from spleen and gall-bladder are negative. Straphylococcus pyogenes aureus is obtained in pure culture from liver, pleura and uterine cavity.

Cultures from the broncho-pneumonic areas of lung and from peritoneum show colon bacillus as well as staphylococcus pyogenes aureus. Kidneys give a pure culture of colon bacillus.

Pathological Diagnosis. — General infection with staphylococcus pyogenes aureus. Infection of kidney, lung, and peritoneum with B. coli commun. Broncho-pneumonia with œdema of the lungs. Acute bronchitis. Fibrino-purulent peritonitis, pericarditis and pleurisy. Acute splenic tumour. Cloudy swelling of kidney. Sub-involuted uterus with acute hœmorrhagic endometritis.

Discussion of Cases.

Case I.—Legg's statistics show that 69 of 100 cases of acute yellow atrophy occurred in females and in 25 there was the association of pregnancy. Thierfelder collected 143 cases, of which 88 occurred in females and in 33 instances it was associated with pregnancy. However, acute yellow atrophy is also found in association with many other conditions and with bacterial infections. Among the bacterial diseases may be mentioned typhoid fever, diphtheria, erysipelas, osteomyelitis and puerperal infection. Richter has collected 41 cases of acute yellow atrophy in association with syphilis. Babes has reported five cases following streptococcus infection and Ballin has collected ten cases following chloroform anæsthesia.

Richter, Charite Annalen, 1898, Vol. XXIII.
Babes, Arch. f. path. Anat. u. Physiol., 1894, 136.
Ballin, Annals of Surgery, 1903, 37, 362.

Hyperemesis gravidarum is a not infrequent association with acute yellow atrophy. Stone reports one case of acute yellow atrophy with this association and collects a large number of others. Meyer-Wirz, among other degenerative changes in the liver of patients dying from eclampsia, found one case of acute yellow atrophy, not associated with puerperal infection. The frequent occurrence of infection in association with eclamptic and other toxæmias of pregnanacy is well known. Schrieber, in a statistical study, reports that out of twenty-nine deaths with eclampsia seven died of sepsis, and Meyer-Wirz, in 117 cases of eclampsia, had thirty-five deaths in which puerperal infection had supervened in three, and in an additional case there was septic pneumonia. However, the toxic symptoms, as shown by the vomiting, were not severe in the case reported here; but it seems that the association of infection and pregnancy is a factor of some significance in the production of acute yellow atrophy of the liver. Strictly speaking, this should perhaps be considered a complication of pregnancy rather than an example of puerperal infection. In view, however, of the probability of the infection beginning in the genitalia, it may justly be considered here.

Case II.—Pyonephrosis is a rather uncommon complication of pregnancy, but hydronephrosis and dilatation of the ureters does not appear to be so. Olshausen has reported sixteen cases of dilatation of the ureter; in twelve of which the condition was unilateral, and in ten of these on the right side. This distribution is supposed to be due to the greater frequency with which the foetal head lies in the right oblique diameter of the pelvis. In this case the position was L.O.A., but the measurements of the pelvis were not noted. It may be possible that a generally contracted pelvis, with an obliterated promontory, would permit pressure to come upon both ureters at the pelvic brim and cause such dilatation of the ureters as occurred in this case.

[1] Cragin, in a study of ten cases of pyelitis complicating pregnancy, states that, according to Vinay,[2] this condition depends upon two etiological factors: (1) Pressure of the ureter by the pregnant uterus; (2) Infection of the urinary tract above the point of compression. Cragin states that in his cases the clinical course was marked by right sided

Stone, American Gynæcology, 1903.
Meyer-Wirz Archiv. f. Gynak. Berl., 1904, LXXI., No. 1.
Schrieber, Archiv. f. Gynak., 1896, LI., 335.
Meyer-Wirz, Loc. cit.
Olshausen, Samml., Klinische Vortrage f. Gynak., 1892, XXXIX., 15.
Cragin, Med. Record, 1904, LXVI., 3.
Vinay, L'Obstetrique, 1899, IV., p. 230.

pain, sometimes elicited only by palpation or sudden motion. A rise of temperature usually occurred. He states that irritability of the bladder, with frequent micturition, is common; but that "the infection is a descending one and cystitis when it does occur, is usually secondary to the pyelitis and ureteritis."

The experiments of Rebraud and Bonneau upon animals are quoted in support of this view. These investigators produced pyonephrosis by aseptic ligation of the ureter, and the injection into a distant part of the body of streptococci or colon bacilli.

The case here reported, because of the exemption of the bladder and the lower part of the ureter, seems to have been a descending infection. Staphylococcus infection in such cases is rare; colon infection is by far the most frequent cause according to the collected cases of Cragin. One instance of streptococcus infection has been reported by Vinay and one of gonococcus by Loy.

It is interesting to note, in view of the recently advanced theory of the common origin of eclamptic toxæmia and toxæmia of pregnancy with vomiting, that this case was admitted to the hospital for pernicious vomiting, and that Meyer-Wirz, in his 35 post-mortems for eclampsia, noted bilateral hydronephrosis and dilatation of the ureters in one case.

Rochard reports a case of severe bilateral pyelonephritis in advanced pregnancy with immediate recovery after delivery of twins. He quotes Kendirdjy's statistics of 62 cases, amongst which there were only two deaths, and advises expectant medical treatment; but states that if interference is necessary premature delivery should be the rule rather than an operation on the kidney. Cova has reported 21 cases in which nephrectomy was done with resulting abortion in only five. The danger of involvement of the second kidney is so great that it would seem preferable to remove the cause of compression of the ureter rather than to remove the kidney.

Fournier has reported two cases of this condition with varied course. In one there was gradual onset in the early months of pregnancy, premature labour and birth of a dead child at seven months. In the other there was an acute attack, nephrotomy and labour at term. Schwab also reports two cases, in one there was a history of gonorrhœa and the infection was severe, but patient went to term. The second case was one of hydramnios and ran an apyretic course. The colon bacillus was

Rochard, Presse Médicale Par., 1904, No. 92.
Cova, Boll. a Soc. tosc. de ostet. e. Gynec, Firenze, 1903, II., 203.
Fournier, Proc. Soc. Obstetrique de Par., L'Obstetrique, 1905, No. 2, p. 160.
Schwab, *ibid.*

the infecting organism, and a live child was born at eight months of pregnancy. Schwab draws attention to the difficulty of diagnosis and of the difficulty of differentiating from appendicitis.

Cathala, in a clinical and pathological study of pyelonephritis in pregnancy, states that there are two main causes: (1) Predisposing cause, the lessened resistance of the pregnant woman to bacterial infection and the retention of urine from compression with its associated congestion; (2) Determining cause, the penetration of the infecting organism to the kidney. He divides the clinical course in two periods: that of onset, in which there are symptoms of general infection, and that of attack, in which there are symptoms of chronic suppurative pyelonephritis. He concludes that the prognosis for the child is bad for, if pregnancy does go to term, the infant not infrequently is of small size and and weak.

Case III.—Peri-uterine thrombo-phlebitis is a most serious condition and is the most frequent predisposing cause of pulmonary embolism and sudden death in pregnancy. Grossman, in a study of 51 post-mortem examinations upon puerperal women, dying from infection found peri-uterine thrombo-phlebitis alone in fourteen instances and associated with lymphangitis in thirteen other instances. Other veins in addition to the hypogastric and ovarian were involved in all cases save one; in three instances the vena cava was also included.

Richter lays stress upon Mahlers sign ("Kletter-symptom") the rapid beat of the heart due to extra work and slight degeneration. He has collected results from 16,000 cases, and found 78 cases of thrombosis and twenty cases of embolism; of the last 60 per cent. were fatal. Mahler's sign was found in 98 per cent. of these cases.

The thrombosis may be due to mechanical causes, but is more frequently associated with infection. The initial lesion in the case reported here would appear to be the infectious process in the throat. This case is possibly therefore one of auto-infection as is the case of pyonephrosis.

Case IV.—Gonorrhœal infection in the puerperium has been much discussed amongst obstetricians and widely divergent opinions are held in regard to its incidence and its influence upon tissues altered by pregnancy.

Kronig's study of 179 cases of puerperal fever showed that M. gonorrhœae was found in fifty cases, while Williams found the organism

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Richter, Archiv. f. Gynak., Bd. 74.
Cathala, L'Obstetrique, 1905, No. 2, p. 165.
Kronig and Menge—Bakteriologie Weib. Genital Kanalen. Berlin, 1897.
Whitridge Williams, Text-book of Obstetrics, 1903.

in eight of 150 cases of puerperal fever. Vogel, in twenty-four cases of puerperal fever, found gonococci four times, twice in pure culture and twice in association with streptococci. Foulerton and Bonney examined 54 cases with negative results. Stone and the writer, in a study of 53 selected cases of pregnancy, found the gonococcus in 17. In three cases labour was premature.

Martin kept under observation thirteen cases of chronic gonorrhœa during labour and the puerperium, and in none of these cases were any symptoms observed which could be attributed directly to the venereal disease. There were no abortions, although in one case labour was hastened by an acute exacerbation of the disease. In four cases the puerperium was practically normal and in the remainder there was a rise of temperature coming on rather late. This, the author considers characteristic of the disease.

Lea taking acute purulent conjunctivitis in the infant as a proof of gonorrhœal infection of the mother has collected fifty cases. In 60 per cent., there was an uneventful puerperium, while 40 per cent. had more or less acute inflammation of the pelvic organs. Acute purulent endometritis with pyrexia was the most common condition, while, in 10 per cent., acute pelvic peritonitis existed. All recovered save three cases infected also with the streptococcus. In institutions, however, acute purulent conjunctivitis in the child is not a just criterion of the frequency of gonorrhœal infection of the mother, for Holt has noted the frequent transmission of gonococcus infection amongst infants who are segregated in hospitals.

The presence of a mixed infection of the gonococcus and some other organism is said to add greatly to the severity of the infection, and many cases have been reported to sustain this view. However, the severity of the constitutional symptoms seems to depend more upon the extent of the anatomical lesion than upon the character of the infection.

Case V.—Pneumococcic puerperal infection is an extremely rare condition and is usually an infection from without. Weichselbaum, as well as Bar and Tissuer, have met with this condition, and Cohn has described a case very similar to the one here reported. His patient after abortion developed a pneumococcic endometritis and later a fatal meningitis.

Vogel, Quoted by Foulerton, Practitioner, 1904, LXXIV., No. 3.
Foulerton and Bonney, Trans. London Obstet. Soc., 1904.
Martin, Berl. Klin. Woch., 1904, March 28th.
Lea, Trans. North of Eng. Gyn. Soc., 1898.
Holt, Trans. New York Academy of Medicine, Jour. Ped., 1905, 5.
Weichselbaum, Wien. Klin. Woch., 1888, 28.
Bar and Tissier, L'Obstetrique, 1896, p. 97.

Foulerton and Bonney also report a similar post-abortive infection from pneumococcus with five other cases of pneumococcus infection following full term pregnancies. They conclude that the grade of infection is, as a rule, not severe and that their series of cases cannot be taken as a just indication of the frequency of this form of infection.

Case VI.—General septicæmia is not an infrequent termination of puerperal infection. The clinical course is usually that of a rapidly progressive acute infection and follows the same course as other septicæmias not of puerperal origin. Streptococcus infection is the most frequent and severe type of infection after labour. If the number of cases studied by Czerniewski, Kronig, Williams, Vogel, and Foulerton and Bonney be collected, it is found that of 498 cases in which the contents of the uterus was examined bacteriologically, streptococci were present in 200 (40 per cent.). While streptococcus is so frequent, staphylococcus pyogenes aureus is most infrequent. Foulerton and Bonney found this organism but once in 54 cases, and it is but infrequently mentioned by other writers. Staphylococcus pyogenes aureus was found in two of the six cases in this study; in one the infection was of the kidney and in the other an acute general infection of all the organs.

Conclusions.

A consideration of these six cases teaches many things in regard to the diagnosis and management of puerperal infection in the more advanced stages of the disease. It may be seen that while streptococcus infection is usually the most common and severe type of infection, other organisms, which usually produce clinically mild symptoms, may run a severe course and cause death.

Auto-infection must be considered to include not only infection from foci of bacterial disease in distant parts of the body. Pregnant women suffering from such distant infection require most watchful care. Auto-infection from the genital canal is probably more common than is generally supposed. This is indicated in a study by Bumm and Sigwart of the bacteriology of the secretions of women in the later months of pregnancy. The streptococcus was found to be present in more than 38 per cent. of the cases, and they conclude that with very careful examination ærobic streptococci may be found in the secretions of at least 75 per cent. of all women during pregnancy and the puerperium. Of the women having streptococci, 20.4 per cent. had fever.

Bumm and Sigwart, Hegar's Beitrage zur Geburtsh. und Gynak., 1904, VIII., No. 3.

From this fact it may be seen that the presence of pathogenic micro-organisms in the genital canal is by no means sufficient evidence upon which to base a diagnosis of puerperal infection, and even when combined with constitutional disturbances the first step only has been taken towards the proper diagnosis of the condition. The term puerperal infection should be broadened to include infection elsewhere than in the uterus, and the location and nature of such lesions should be recognized before any operative measures are undertaken. This can only be done by exact physical examination, examination of urine, blood, etc., and a proper knowledge of the varied anatomical manifestations of infection. The frequency with which pain is right sided in hydro-nephrosis and pyelitis should be remembered in differentiating the diagnosis from appendicitis.

The utter futility, and even harmfulness, of curettage, if attempted in such cases as those here reported, is readily seen; and when the varied character and oftentimes widespread distribution of puerperal infection is considered, the explanation for the high mortality (over 70 per cent.) of hysterectomy in that condition is obvious.

A THIRD CASE OF TRANSPOSITION OF VISCERA AND OTHER AUTOPSY FINDINGS.

BY

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Among the last 50 cases which have come to autopsy from the Foundling Hospital are several which are worthy of passing recognition. The case of transposition of viscera shown here is the third which I have seen post-mortem, the two others having been reported to this Society within the past year. Twice, in addition, it has been my fortune to see cases of dextrocardia, which evidently were due to transposition, one of them being Dr. Fry's case presented here one or two years ago.

This case (F. 51) was a female child aged nine days, who died of broncho-pneumonia. The condition was one of complete transposition. The left lung had three lobes, the right two. There were three pulmonary veins on the left, two on the right. The heart lay to the right. There was a large patency of 8 mm. diameter in the interauricular septum, and one of 6 mm. in the undefended space of the interventricular septum. The heart chambers were completely transposed; the aorta lay in front, and gave off the innominate artery and the left carotid and subclavian in the normal way. The aorta ran down the

left side, as usual. The stomach, spleen and pancreas lay to the right, the larger lobe of the liver and the gall bladder to the left, and the colon and appendix to the left; the right kidney was higher than the left, and the rectum lay in dextroposition.

The other cases of interest, to which brief reference is made, are as follows:—

General Peritonitis:—F. 24.—Female, 54 days old, general septic peritonitis, streptococcus infection, pure culture. No cause or place of entry of the infection could be found, though all the usual sources were examined with care.

F. 5.—Female, 27 days old, died of the same condition, streptococcus infection, pure culture. The navel was scabbed over, and there was septic thrombosis of the hypogastric arteries and veins of both sides.

F. 42.—Male, 49 days old, general septic peritonitis, cultures mixed, bacilli and cocci. There was ulceration and necrosis of the umbilicus and the abdominal wall.

It will be noted that two of these cases died through sepsis gaining entrance through the cord. Another case showed a small abscess in the abdominal wall on the course of the left hypogastric vessels, but peritoneal sepsis had not occurred.

Abscess of the Lung.—Two cases showed abscess following pneumonia.

F. 26.—Female, 45 days old. The lower lobe, left lung, was consolidated, and an abscess, 1.5 cm. diameter, bulged on the axillary and diaphragmatic surfaces. It contained pneumococci and other diplococci.

F. 31.—Male, 23 days old, with bilateral broncho-pneumonia, showed a similar abscess encroaching on two lung surfaces, with reddish pus, which contained different forms of bacilli and cocci. Icterus also existed, without any cause therefor being found in the liver or gall bladder.

Birth Injuries:—F. 30.—Female, 168 days old, had scabs on each side of the head, probably from forceps. The scalp was thick and œdematous, adherent strongly over an area 2.5 cm. diameter, infection staphylococcus. Death occurred from broncho-pneumonia.

F. 40.—Female, 19 days, died of septicæmia. There were scabs on the bridge of the nose, left upper lip and left parietal bone. The posterior half of the scalp was œdematous and thickened, and an abscess containing half a drachm of pus, streptococcus infection, was present. The left parietal bone was depressed and fixed in the depressed condition, but no injury to the brain was evident.

F. 36.—Female, 40 days old, had a caput succedaneum, raised 2 cm. in the left frontal region. It was 4 cm. in diameter; the bone was

depressed and eroded, but the brain was not damaged. No bacteria were found in the hæmatoma, though the contents appears disintegrated.

Meningitis:—F. 27.—Female, 47 days, died of acute cerebo-spinal meningitis, the purulent exudate being distributed over all parts of the brain and cord; pneumococci were present in it. The lungs were healthy, the ears and mastoids were clear, and no focus of suppuration was found elsewhere. There was muco-pus, dried, at the nostrils.

Foramen Ovale and Ductus Arteriosus.—Of 34 infants, aged from 15 to 60 days, the foramen ovale was patent, directly or obliquely, in 20 (nearly 59 per cent.); the ductus arteriosus was entirely closed in all but two cases.

THE IMPORTANCE OF CHEMISTRY IN MEDICINE.

BY

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Medicine is above all a practical science, dealing strictly with things of utilitarian value. Hence, any matter which has not a strict sphere of usefulness is unlikely to find a place in a medical curriculum.

That those who have had to do with the working out of a course of medical study have for some reason seen fit to place chemistry in the front rank of importance is evident from the amount of time allotted at the present day to its study.

It is my purpose to discuss with you this afternoon some of the reasons for this step, and if possible without any attempted apology, to show you the correctness of this view.

First of all, I should like to compare the status of chemistry as taught in the medical schools of to-day with that of twenty-five to thirty years ago.

About 1875 there were three medical schools in New York City. The College of Physicians and Surgeons, the Medical College of the University of New York, and Bellevue Medical College. At the College of Physicians and Surgeons chemistry was taught by Professor St. John. Professor Draper was at the College of the City of New York, and Professor Doremus was at Bellevue Medical College.

The entire course of medical study in those days was finished in two years, the terms being of five months duration. Hence, ten months was the time in which a man obtained his degree. This was instead of the twenty-eight months which is now requisite.

No recitations or examinations of any kind were required till the end of the course, and a man failed or passed on the entire examination.

The instruction in chemistry was limited to three lectures a week, and attendance was in no sense compulsory. The lectures were repeated each term, so that the men heard the same lectures in the second term that were given in the first. The ground covered in these lectures comprised both chemistry and physics, with a large preponderance of what would now be designated as high school physics.

A point of great interest in comparing the conditions at that time, and at the present, is that here was absolutely no attempt at laboratory instruction. The student heard with his ears, but he did not see with his eyes, and far less did he handle with his hands.

It was not until about 1874 that a laboratory course was given at the University of the City of New York. This was of the nature of a private speculation by the Professor of Chemistry. Fees for the same were extra, and of course attendance was entirely voluntary.

The first attempt at real and systematic laboratory instruction was after the removal of the College of Physicians and Surgeons from 23rd street to 59th street, and the building of the Loomis Laboratory in 1884.

Between 1884 and 1885 the University of New York started recitations as an integral part of a laboratory course; then came graded instruction, and recitations were obligatory in every branch of medicine.

You will note the conditions in the fifteen years of which I have spoken. First of all, an incomplete course; secondly, no particular obligation as to attendance; and thirdly and very importantly, no practical laboratory work pursued systematically.

Is it any wonder that students in those days with rare exception lost interest in their work before they had fairly begun, and that by the end of the course they were anxious and ready to forget all they had learnt. The whole thing resolved itself into a dreary memorizing of a mass of data not joined to one another, and leading nowhere. Particularly is it the case that no attempt was made to show the fundamental relations between the facts of chemistry and the processes with which the medical man is daily brought face to face. In this non-correlation of subjects was the greatest lack in the whole system of teaching.

We will now advert to the condition of teaching at the present day, and before I touch on this point, I wish to impress upon you the great advantage, I might almost say the absolute necessity of a preliminary training in chemistry before entering the study of medicine.

Osler, who has devoted much thought to the teaching of medicine, says in one of his addresses:—

"No one should be permitted to register as a medical student who has not had a good preliminary training in chemistry. It is an anomaly that our schools should continue to teach general chemistry to the great

detriment of medical chemistry, which alone belongs to a medical curriculum."

The medical student now entering the first year is made acquainted with the fundamentals of chemistry in the lecture room. The laws of chemical action are taken up step by step, and it is seen that chemistry, instead of being a mass of heterogeneous facts is a connected whole. It is also at once shown that these facts are intimately connected with the everyday occurrences of medicine, and that the laws of mass action, of dissociation, and the laws of the conservation of energy and matter hold just as closely when applied to the human body as they do in the test-tube.

From the lecture room the student is taken to the recitation room where a chance is given to him to discuss the problems enunciated in the lecture hall, and the intimate intercouse exists between teacher and student which is so necessary to an interested conception of the subject is furthered.

It is in the laboratory however, that the student sees under his very eyes processes taking place in the test-tube, the retort and the beaker which until now have been to him little else than words. It is in the opportunity for accurate observation and conscientious note-taking that he derives a benefit which will follow him into the clinic, the hospital and the sick-room.

The great advances in medicine in the nineteenth century were vaccination, anæsthesia and the introduction of antiseptics. Vaccination, because it led to the stamping out of that disease, small-pox, which had played havoc with so many countries is of perhaps the most importance, for following up the results obtained with vaccine we have been led to antisepsis, with which it is closely related, as you shall see.

I think it will be generally conceded that the great sub-advance in medicine in the last 100 years, is in the opening up of the great field of bacteriology, and from a popular stand-point this is pretty evident, for nowadays no child is unfamiliar with the words germ, sterilization, bacillus and infection.

Not only have we found the cause of many diseases which were at one time so mysterious, but more than all we have been able to find means of combatting them both in a preventive and a curative manner as sure as the extinguishing of fire by water.

One has only to go back to such historical events as the great plague of London in 1666 or to the fearful scourges of yellow fever or small-pox to see that there is a difference between then and now. A total lack of preventive precaution, a total lack of remedial measures of any value struck at the very roots of commerce and of domestic life.

One has only to read the accounts of Florence Nightingale's service in the great Crimean campaign to realize what hospital fever meant no longer than fifty years ago.

Gangrene which carried off thousands and thousands of wounded men in war time has entirely disappeared, and puerperal fever that dreaded infection which has killed millions of women is no longer heard of as an epidemic.

In order to show you how this wonderful change has come about in as interesting a manner as I can, I am going to take you back for a few moments to the year 1822 to the little village of Dôle in France. Here was born the son of a tanner, Louis Pasteur.

Pasteur began his studies at the college of Arbois and at Besançon, and then went to the Ecole Normale at Paris. Here it was, that, full of enthusiasm for chemistry he listened to the lectures of the great Dumas and Ballard. Through the influence of these teachers he decided to devote himself entirely to the scientific investigation of problems in chemistry. That this required no small amount of courage in those days is evident from the description of the laboratories and equipment. The great masters of the science either worked in a cellar or were relegated to the corners of a garret. There were no marble tiled laboratories in those days.

Having completed his curriculum at the Ecole Normale, Pasteur became assistant to Professor Ballard, and while with him his attention was directed by Delafosse to the study of the polariscopic properties of crystals. Having the idea that the polarimetric behaviour of crystals might be connected with the crystalline form he proceeded to examine a large number of crystals.

Amongst those which he examined were the double tartrate of ammonium and sodium. These crystals were not like some of the others which he had examined, for their solution rotated the plane of polarized light in a constant direction.

Now at the same time there was an acid of the identical composition with tartaric acid which had the remarkable property that neither it nor its salts had any effect on polarized light. This acid was known as racemic acid. It was optically inactive.

The crystalline form of the salts of these acids had been studied many years before by Mitschelich, who was unable to detect any difference between them. Under the keen eye of Pasteur were detected small faces or facets which had escaped the observation of Mitscherlich. On close examination he found that the solution of the racemic salt deposited crystals which were of two kinds, to be distinguished on close examination by the difference in the position of the small faces of which

I have spoken. For, while one kind had faces on the left-hand side, the others had faces on the right; in other words, the crystals were the mirror image of each other.

On separating these two types of crystals, he found that the right-handed crystals turned the plane of polarized light to the right, while the left-handed crystals turned the plane to the left.

You may think that I am wandering far afield from my subject of the Importance of Chemistry in Medicine, but as I shall show you, this chemical experiment was the starting point, which logically carried out by Pasteur, a chemist, has led to modern surgery, diphtheria antitoxin, the pure milk of cities, which saves thousands of young children every summer from death, and to a host of other advances in medicine with which is familiar every schoolboy.

It was in endeavouring to separate out the two kinds of crystals by means other than the comparatively clumsy one of picking them out by means of a lens and a pair of forceps that Pasteur came upon an important fact.

The solution of the double salt is prone to fermentation with the formation of mould. On allowing the solution of the sodium ammonium racemate to stand during the hot days in summer, Pasteur noted that the contents of the flask had become mouldy or as one would familiarly say, "gone bad."

As Professor Frankland remarks, most chemists would have poured the contents of the flask down the sink disgusted that the material had been spoiled. Not so Pasteur. He at once thought of how interesting it would be to investigate the properties of the solution which had been attacked by the mould.

To his astonishment the solution which had originally been inactive as the racemate is, was now optically active. In other words, the mould has acted upon the solution and in its growth had consumed one part of the inactive acid leaving the other half which was optically active.

This as you see was purely chemical work, but was verging to fields with which the chemist of that day was unfamiliar, namely living material.

It was in the year 1854 that Pasteur having dealt with moulds and such things in a purely chemical way took up the study of fermentation in itself, and showed among other things of importance, that it was not necessary to have organic matter in order to propagate life, that such a living thing as yeast did not need albumin in order that it might grow. He showed conclusively that ammonium salts might replace organic material with ease, and might be used just as readily for the purpose of making the plant grow.

In the course of this investigation, he showed that not only were albumins non-essential in the growth of certain plants, but that in some cases oxygen itself was not only unnecessary but positively harmful.

You will note here two very important facts, chemical in origin, which had a very far reaching influence on Physiology. First, the non-essential character of organic matter for the propagation of forms of life, and second, the non-essential character of oxygen for its maintenance.

At this point, and we are now reaching the mere medical side of Pasteur's work, he overthrew what was at the time a dogma, and the cause of the bitterest controversy, but which to-day would be the jest of any primary school-room. That was the doctrine of spontaneous generation.

The doctrine of spontaneous generation taught that it was possible for living things to be formed from absolutely non-living material, that germs might be produced in a medium which was absolutely devoid of living things to start with.

This was a theory almost as old as science itself. Aristotle taught it, Virgil, Pliny and Ovid discussed it, and in later times, in the sixteenth century, van Helmont had advanced the theory to such an extent that he affirmed that he could produce mice, and gave a celebrated recipe which required only a little soiled linen, a few grains of wheat and a piece of cheese.

Although of great interest it would be impossible to enter into the details of the fierce discussion which raged over the question, which has now been relegated to the shelves of superstition along with sea-serpents and ghosts.

It was following these experiments that Lord Lister, the greatest of the English surgeons of the nineteenth century took up the matter of wound infection, and showed that here also, as in the Pasteur flask one could have no infection without the initial presence of bacteria. All one had to do was to keep the wound perfectly free in the first instance from bacteria, or if these were present to kill them by means of chemicals, to absolutely prevent the formation of pus. When one compares this result with the hospitals of the Crimean war where the putrefaction due to the ignorance of this fact was so great that the stench from the wounds could be recognized for hundreds of yards around the hospital ward, where men died by tens of thousands from wound infection we can recognize the importance of Pasteur's chemical experiments with the sodium ammonium racemate.

I will quote the estimate of Roux upon Pasteur's influence on the work of Lord Lister.

"Illuminated by the investigations of Pasteur, Lister understood that "the complications in surgical wounds were due to microbic origin, "which came from without. He conceived the idea of antiseptic dress- "ings to kill the bacteria. With antisepsis began a new epoch in sur- "gery."

"Thus it is, that Pasteur who never in his life held a scalpel or made "a surgical dressing has saved more lives than all the masters of sur- "gery."

I should like to go on to show you how, advancing from the overthrow of the doctrine of spontaneous generation, Pasteur took up the diseases of plants, the propagation of the vinegar plant, and the diseases to which yeast is subject. From there he investigated the diseases of the silk-worm, which were costing the silk growers of France hundreds of thousands of dollars every year. As the result of these experiments he went on to the disease known as anthrax, which threatened to exterminate the cattle-growing industry in France, and through the experiments which he made, carried out with that precision which his chemical training had bestowed upon him, he was able to reduce the death rate in sheep to 1% and in cattle to 3 per 1,000.

The saving to France from these experiments alone in the ten years following was $1,400,000.

From anthrax, he passed to the investigation of rabies, the terrible affliction which follows the bite of a mad dog. It would be interesting and instructive to be able to tell you of the character of his experiments. It would show you here again the chemical precision with which he worked, but time will not permit. But, employing the same careful methods which he had used in his examination of the double tartrates of sodium and ammonium, and the same experimental skill with which he exposed the fallacy of spontaneous generation, he was able to prepare an antitoxin which in the year 1897 had been used in 20,000 cases with a death rate of less than 5 per 1,000.

Thus I hope I have shown you what a single man, a chemist, not a doctor of medicine, following out the exact methods of chemical investigation, pursuing the close reasoning employed in chemical research has been able to accomplish by his own unaided efforts.

Of some of the sequence of his work carried out by those who have so ably striven to hold up the undying flame since his death, I shall now have an opportunity to speak.

You are all aware that if an animal be given morphin or strychnin or hydrocyanic acid in a sufficient dose it will die.

These poisons do not act violently on the tissues of the body. Practically no trace is left of their effect if the animal be examined after

death. If, on the other hand, an animal be given such a corrosive substance as strong caustic soda or sulphuric acid the effect will be apparent to the most casual observer in the eating away of the tissues. Yet in the case of the former compounds the effect must have been profound, else the animal would not die with such rapidity and with such certainty.

There is yet again a third class of substances such as the poison extracted from the common castor oil bean of such power that an amount which would lie on the top of a ten-cent piece would cause the death of a million rabbits. It is to this class of substances that I wish to refer, and to show you of what importance they are in medicine at the present day, and how very closely they are connected with chemistry.

You will also see that they are very intimately related to much of the work of Pasteur, and it is only since his death that the knowledge of them has made very substantial advance.

There is also a curious property of these substances which is shared to a less degree by some well known poisons such as morphine. The study of this feature was commenced by Pasteur and has continued to engage the attention of hundreds of investigators since, and is still being actively pursued. It is this. If one administer an amount of the poison not sufficient to cause death, and continue these small doses for some time, it will be found that the animal is now capable of withstanding amounts of the poison which would be sufficient to kill many animals which had not had the treatment.

Moreover, if we inject the blood of the treated animal into another animal, that animal, too, acquires the property of withstanding the toxic substance. In the technical language of medicine, that animal is *immune.*

We will now inquire what bearing this has on the process of disease.

It is perfectly familiar to all of you that such diseases as pneumonia, diphtheria or typhoid fever are caused by bacteria. Those bacteria may enter the system from contact with a person afflicted with the disease, or through the dust we inhale in the streets or through a wound.

How is it that these minute organisms, many millions of whom might lie on the head of a pin, can produce such profound effects? They do not devour their host, nor do they multiply in such numbers as to block up the arteries and veins, and so interfere with the circulation.

It is because in their growth they produce poisons, just as the castor oil plant produces its poison in its growth.

These poisons are definite chemical entities which act in much the same way as strychnine or morphine. Thus they produce their effect. In other words the effects of diphtheria or lock-jaw are just as much

chemical phenomena as the production of alcohol from sugar through the agency of yeast or the production of vinegar from alcohol through the agency of the vinegar plant.

Now what is the process which takes place when an animal is attacked by diphtheria? We know that the bacteria enter the organism by the nose and throat, and are even in the height of the disease to be found almost exclusively at the back of the throat. They are made evident by the patches of white which one sees there. They grow, and in the process of growth they secrete poisons of great strength which cause the high temperature, the paralysis and all the other symptoms which are associated with diphtheria.

It is, therefore, not the bacteria themselves which do the damage, but the poisons which they secrete. These poisons exert their effect by combining with the cells of the organism. We thus see that both in the process of production and in the effects they produce the matter is one of chemical combination.

Is there any way of preventing this combination of poison with the cell?

I want you to bear with me a moment while we go over a simple chemical experiment which all of you have done many times.

Sulphuric acid and its solutions have an acid reaction. Sodium hydroxid has an alkaline reaction. They combine with one another according to the law of definite proportions to form sodium sulphate, which is neutral.

Ammonium hydroxid also has an alkaline reaction and combines with sulphuric acid to produce ammonium sulphate which is also neutral in reaction.

Suppose now that we take sulphuric acid and treat it with sodium hydroxid. We form sodium sulphate. If we now add to the mixture ammonium hydroxid no ammonium sulphate is formed. Suppose now that we consider ammonium hydroxid as the cell, the poison as the sulphuric acid, can we interpose a substance which will act as does the sodium hydroxid in preventing the poison from reaching the cell?

You have all heard of diphtheria antitoxin, and many of you, I dare say, have seen it used in your own families or in that of your friends. What is it? How is it formed, and what relation does it bear to our sodium hydroxid?

Diphtheria antitoxin is made by inoculating a large animal like the horse, which is in itself resistant to the action of diphtheria poison, with the poisons of this disease, first in small amounts and then in larger doses from time to time till the animal is receiving doses which would kill if they had been administered at the outset. This is, as you see,

quite like the experiment with the poison from the castor oil bean which we have already discussed.

And now we come to a most remarkable property which the animal itself has and which you have perhaps thought of in connexion with the castor oil poison experiment. It is the property which the animal has of producing itself an anti-poison. It is thus that the animal has the only chance of protecting itself.

This counter-poison produced from the cells of the animal's body, corresponds to our sodium hydroxid. Its formation is stimulated by the introduction of the poison, and fortunately it is formed in many times the amount which is necessary to neutralize the poison itself.

Therefore, at the end of the experiment with the horse, without doing the animal any injury we have produced from the cells of its body large amounts of anti-poison. If we draw off the blood of this animal, and allow the blood cells to settle we have in the clear serum a solution of the anti-poison to diphtheria, which if injected into the body of a child attacked with diphtheria will neutralize the poison produced by the micro-organisms as fast as it is formed and so save the life of the child.

You can see from this, and from the analogy which the action bears to the experiment with the ammonium and sodium hydroxids, the absolute necessity of giving the anti-poison as soon as possible. For once the poison has had a chance to attack the cell no amount of anti-poison is of any value. But if the anti-toxin be administered first there will be in the blood of the child sufficient anti-toxin present to combine with the poison and so it never gets a chance to reach the cell.

The action of toxin and antitoxin in their relation to the cells of the body is therefore a purely chemical one. The whole of modern serum therapy or curing disease by means of antitoxins is a chemical process.

We can see how important it is to have a sound knowledge of chemistry in order to understand the most marvellous of the discoveries since the first time a man stretched out his hand to help his fellow man in sickness and disease.

I could go on at great length to give you many other reasons why this process is a chemical one. I could cite you the experiments of Ehrlich, of Arrhenius and Madsen, to show that these substances obey the laws of definite and multiple proportion, of mass action and of reaction velocity; in other words behave as simple chemical individuals do, and do so with an accuracy which is surprising considering how complicated must be the structure of these compounds.

The mistakes which have been made in the investigation of these substances have been made by observers who have not borne in mind sufficiently the laws of chemistry with which they were dealing. They

have thrown mystery and doubt around a subject which, handled in a chemical way, is becoming clear.

The subject of serum therapy is only in its infancy. It ramifies throughout the whole field of medicine. It has not only to do with bacteria, but with the poisons secreted by the body in morbid states, and with such things as the poisons of serpents.

The great advances in curative medicine in the next hundred years are likely to be along the lines which I have indicated.

The advance which is being made to-day is being made by men with a sound knowledge of chemistry, and the advance will be made by the men who have received thorough training in the chemical laboratory, and will put that training to practical use.

I have spoken to you of the results which have followed the application of chemical methods to investigation in medicine. There is another field in which chemistry makes itself of daily use to the physician. This is the field of diagnosis.

Hippocrates, the father of medicine, in speaking of the difficulties with which the physician is beset, gave expresssion to the memorable words: "Art is long; life is short; opportunity is fleeting; experience is "fallacious and judgment difficult."

The medical man who keeps these aphorisms always before his eyes will avoid many of the pit-falls into which the practitioner often runs.

It is the last two of these aphorisms to which I wish to call your attention, the matter of experience, and the matter of judgment, for these two are as closely interwoven with success in medicine as the thousands of threads of a silk scarf.

It has been also truly said that a disease recognized is a disease half mastered. Does our laboratory training help us to recognize the symptoms of disease. What relation does our work with test tubes bear to the bed-side of the patient? Do the hours we spend in the laboratory at work on chemical problems help us to become skilful physicians? They do, and very directly too, but it is in a line which you have never completely considered.

Of all the habits most difficult of acquirement and most essential to the physician that of accuracy of observation is the greatest. It is the quality which distinguishes the master of medicine from the man who works hap-hazard, and who at length, leaving a line of unrelieved suffering humanity behind him, sinks into a well-merited oblivion. It is this, and this only, which differentiates the two types of men.

The memorizing of thick volumes of medical lore will avail little; skill with the hands does not count for much, it is the skill of the artisan;

fine instruments and equipment are nothing, these can be bought with money. But the man who has cultivated his five senses so that with accurate and quick perception he can by sight, by hearing, by smell, or by touch, recognize the small differences which separate one disease from another will rise above his fellow practitioners, and gain name and fame while his colleagues wander aimlessly in the broad fields whose boundaries are nothing.

We saw it in the case of Pasteur with the little facets on his crystals. We see it every day in the brilliant work of the masters of medicine. Accuracy of observation is the thing.

It is said of Liebig, that in order to cultivate this accuracy of observation, he performed the precipitation of a salt like sodium chloride with silver nitrate, hundreds of times, so that without knowing what the substance was, he could instantly tell its composition from its external appearance.

He was able, in a thousand bottles all containing white substances to name each substance without looking at the signature. He had cultivated the faculty to such an extraordinary degree, that the minute differences which would escape the observation of the ordinary observer were sufficient to enable him to differentiate these substances from one another.

It is this very thing, which you learn in the painstaking work which you do in the laboratory, and nowhere else do I believe have you an opportunity of cultivating it to such an extent.

You deal with substances of definite composition. You are in perfect control of the conditions of dilution, of temperature, of light. You are able under a definite set of conditions always to reproduce the same results. If you do not, you are dealing with another set of conditions, and all your faculties are brought to bear to either reproduce the condition, or else to find out what factor in the experiment has been varied.

It is therefore a case of the utmost accuracy in all the work you do if you would achieve the highest result.

The body is nothing more nor less than a complicated test-tube. The results which we obtain under one set of conditions we call health. If we have disease, one or more of the factors of the experiment have been varied. It is your duty as the physician to find out that factor, and having found it out to change it so that you reproduce the conditions which we recognize as normal.

I can assure you that the man who has taken a simple reaction and has studied it completely till the possibilities of learning anything further from that particular reaction are exhausted, has done more to fur-

ther his success in medicine than learning by rote ten books of anatomy, of physiology or the practice of medicine.

The habits which he learns in the laboratory of closely observing a small thing, and of noting carefully all the conditions which influence a given result, will stick to him through life and influence his work only in the direction of the highest things.

Do not wonder therefore why you should spend precious hours over your test-tubes and your beakers, when you might be occupying your time in the hospital wards examining lungs or listening to heart sounds.

You cannot observe accurately so complex a system as the human body till you have mastered the observation of simple phenomena under control. The place to do this is the laboratory.

In conclusion, I will quote to you what the great chemist Ostwald says of the importance of chemistry in physiology, and what Sir Michael Foster states of the relation of physiology to medicine.

In an address, a résumé of which appeared in the Zeitschrift für Physikalische Chemie in 1897, in speaking of physiology, Ostwald said:

"Of all the departments of chemistry, physiological chemistry is "about to yield the most important and pregnant results. The physio- "logist who brings to bear to his subject a knowledge of chemistry as it "is known to-day will perform a service to his science not less important "than that rendered to chemistry by Liebig."

And Sir Michael Foster, in his delightful essay on Vesalius, says:

"I may go so far as to say that the knowledge of the laws which "govern the phenomena of all living things are so essentially the basis "of all attempts to succour and to watch over the welfare of one set of "human beings, that the history of physiology cannot be regarded in "any other light than as the heart and kernel of the History of "Medicine."

If these two statements of two of the masters of chemistry and physiology be true, and I believe they are, can there be a doubt in the mind of anyone as to the importance of chemistry in the study of Medicine?

AN INTERESTING FAMILY HISTORY OF EPILEPSY.

C. A. Peters, M.D.

Montreal.

When in camp, at Laprairie, with the militia last week, one of the troopers paraded for treatment was an epileptic. His family history seemed to me so interesting that I jotted down the following notes. The case is also worthy of note from the fact that a fright was the direct cause of his first attack.

Tpr. R. M., aged 22, farmer.

Personal History:—Up to age of 10 had always been healthy, not having even the ordinary diseases of childhood. At this time the family moved from one village to another. Their new home was situated quite near the railway track. At midnight of their first day, the "Express" whistled immediately opposite their house and not 20 yards distant. This partially wakened the lad out of a sound sleep and immediately he took a convulsion which, from the description given, was one of genuine epilepsy. For several years he had one nearly every night, and sometimes two in a night. Under treatment they became less frequent until one in a week or fortnight was the average. During this time, however, if he became very excited during the day he would be sure to have an attack at night. For the year and a half previous to his coming to camp, he had no fits. For the first four nights in camp he had a fit each night, then two nights without any, and the following night two attacks. He has never had a fit during the day. He has no aura, but in the morning he can tell that he has had an attack, because his head aches severely for the whole forenoon and he feels dull and heavy. He never wakens during the attack, but goes from the convulsion stage into a heavy sleep. Patient has always slept with a brother some ten years older than himself, so there is not much likelihood of his ever having had an attack previous to the one noted at the age of 10.

Family History:—Does not know anything about grandparents. Father, æt. 63, alive and well; never had any fits. Mother, æt. 62, alive and well; previous to age of 21 had numerous fits; none since. Brothers, five alive and well; 4 dead; two cause unknown; 1 infant of summer diarrhœa and one accidentally shot.. Paternally, uncles and aunts never had any fits. Maternally, uncle, died at age of 35, of epilepsy; had numerous attacks, diurnal and noctural; the day he died had status epilepticus. Maternal aunts, two in number, never had any attacks. One maternal aunt's children, a boy and a girl, both suffer from attacks, and one daughter of the other maternal aunt also has epilepsy.

As far as the patient knows there is no insanity or other neurotic taint in family.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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Remittances, advertisements or business communications are to be addressed to the Montreal Medical Journal Co., Box 273; all others to the Managing Editor, 216 Peel Street, Montreal. All communications intended for insertion in this Journal are received with the understanding that they are contributed exclusively to this Journal. A limited number of reprints of articles will be furnished to authors at cost price, if a request to that effect accompany the manuscript.

VOL. XXXIV. AUGUST, 1905. No. 8.

THE CLOSER UNION OF THE MEDICAL FACULTY AND THE UNIVERSITY.

To renounce prerogatives long established, long respected, and to yield these of free will, is one of the hardest acts that any corporate body can bring itself to perform; but there are times when to yield gracefully is the best policy, and it may be laid down that a Corporation which by its free act can bring itself to give up what it has long treasured shows that it is progressive. Such a body therefore proves that it is not living upon its past, but has confidence regarding its future.

It is an old story in Montreal that the Medical Institution saved and made McGill University by consenting early in the last century to be the Medical Faculty of that University, and the first graduate of that University was a student in medicine. So it was that the Medical Faculty was able at the beginning to dictate terms to the University, and among these was, what up to the present time has distinguished the Medical from all the other Faculties of the University—the privilege of managing its own financial matters. And on the whole, it

has managed them most ably; indeed, members of the Faculty have themselves time and again contributed to the building fund, and stinted themselves personally that the school might prosper.

Although thus the present members may point with pride to what has been accomplished in the past, we nevertheless believe that their recent action in seeking complete union to the rest of the University is that best fitted to ensure the future interests of the school.

For times have changed. Medical education is a far different matter nowadays to what it was even 20 years ago. A Faculty, small in numbers, could in the past both conscientiously and comfortably give all the needed education, and the students' fees much more than repaid each individual member of that Faculty for his efforts. Where once the didactic lectures sufficed for the needs of the students of two years combined, to-day the practical class demands one teacher for every 15 students, and the necessary apparatus and material consume large sums. Such education as that afforded nowadays costs much more than the students' fees brings in, and thus, even apart from endowments, the members of the teaching staff receive what can only be regarded as honoraria.

The time is passed, therefore, when the Medical Faculty by its own means can contribute all that is needed to make a school successful. Our profession, it is true, is accustomed to much charitable service, but that does not make it right that it should bleed itself for the public benefit.

The time has come when the laymen should recognize the advisability and advantage of supporting all medical schools if the country is to be supplied with practitioners of high grade, and the best way to interest laymen in the wellbeing of the Medical Faculty is to give them an interest in the affairs of the same. Thus it is that everywhere throughout the States, from Harvard downwards, the Medical Faculties are becoming portions of universities, and in general the results of complete union are most beneficial.

We feel sure that the same good results will be experienced here in Montreal.

There has been, we need not say, a higher ground for this fusion that seems to be politic, viz., that a student gains the greatest good and becomes the most all-round man who regards his University, not merely as supplying him with a degree, but as the place where he has studied and got to know his fellow man and his means of life and thought. There can be no question that to live only with those having like aims and like pursuits is narrowing, and that the student gets the most out of his University who freely mingles with and becomes acquainted with men of different types—the developing theologian, the budding engineer,

the would-be philosopher, and those who cultivate the law. It has to be admitted that, while the Medical Faculty of McGill has regarded itself as apart from the rest of the University, medical students have somewhat rejoiced in their aloofness from the rest of the student body. It is to the students own good and benefit that this feeling of separation be done away with.

THE TORONTO GENERAL HOSPITAL.

The City of Toronto is now facing the problem of a new general hospital; the facts, briefly, seem to be these: representatives of the present hospital board, the Provincial Government, the City and Toronto University have met, and favoured the proposal. The present trust would be surrendered, together with, we understand, $25,000 a year derived from the present endowment. The University promises $50,000, the Provincial Government $250,000, Mr. Cawthra Mulock and another $100,000 each; the City of Toronto has had legislation granted to give $200,000, which leaves $300,000 to be raised to bring the amount up to the $1,000,000 desired. The site chosen is on the southeast corner of College Street and University Avenue. Severe opposition at once arises from the smaller hospitals of the city, declaring that if the City has $200,000 to give it should divide it among existing hospitals; though we appreciate the point of view of those who oppose the project, it is evident to everyone that unless the new scheme is approved and undertaken the City will not give $200,000; and it is doubtful whether private citizens who undertake to give $600,000 in all should have ulterior motives imputed to them: when men give so much money for a charitable object, there is little likelihood that they are doing it to further the interest of a clique or even a number of cliques. The probable outcome will be that the private wards of the new hospital will be open to all practitioners of the City, and, if the staff of the hospital do not see fit to oppose this, the matter might end there. The opponents of the new hospital say that there are enough hospital beds to accommodate all the patients of the city; they surely can have but little faith in the progress of Toronto, of which we hear so much. In a growing city and a growing country, surely such arguments are mere trifling.

There is a wider view, we think, to be taken of the whole matter. With such a hospital and equipment, medical science will be advanced, and the status of medicine in Canada heightened; it is not to be argued against this that some of the best work of medicine has been done in adverse surroundings; elsewhere in this number reference is made to Pasteur, and we think we will scarcely be contradicted if we say that the Pasteur

Institute greatly increased his ability to do good work, although he made his name in humbler surroundings. Toronto has probably by this time realized that dispersion of energy in medical lines has not led to as great advance as might have been made; we say this, as speaking for Canada, and not in a spirit of criticism. Now that an opportunity for a really great hospital is in sight, we sincerely hope that it will lead to a result worthy of it; and when the Toronto General Hospital is built on the scale proposed, we shall feel proud of it, and wish it as well as if it were in our own city.

INFANT MORTALITY.

At this season of the year there is a great deal said and written about infant mortality, some of it of the sensible and some of the Hobhouse variety, and there are few subjects in which figures can be made to take a more horrid guise. The medical profession may need to know more about the subject, but the laity certainly do so; and there are two facts which can never be too strongly reiterated. The first is that of the children of the poor who are not suckled by the mother many—we might say the most—will die, and this depends in no sense upon the physician, but upon the mother. The food supply of the world at large will not do for infants, and Providence has placed the mother between the infant and the food supply. If the mother for any reason whatever, cannot take this responsibility, the infant and the food supply come directly in contact, and the infant generally dies.

The second point is that if the infant and the food supply are to come in contact, the food supply must be made as suitable as possible for the infant: that is, the milk supply must be the purest that can be obtained. However good may be the intention of the milk vendor or supplier, we venture to say that not one in ten, perhaps not one in a hundred, really know what is to be done in the care of their cows and the work of their attendants, and the care and preparation of their utensils to enable them to put milk on the market in first-class condition. Rigid inspection, tedious and painstaking teaching of dairymen, prevention of the sale of milk by grocery stores, and other such measures will in time bring about the desired result. If statistics are to be trusted, there are some cities in America that have solved the difficulty, and many in Europe that have not. At the lever of this machine must be a specially trained man, for, with deference, the average physician is not much better qualified to be a milk inspector than to drive a locomotive. He must know every trick of cleanliness that exists, and he must be so much of an enthusiast that he will

never rest until every dairyman knows as much as he. Ordinary cleanliness will never produce first class milk, and the present writer knows at least one dairyman in Montreal who has expressed a desire for this knowledge of the higher part of his business. The knowledge should be ready at hand to give to him who asks it; this costs money which will come back in time, but which, even now, can buy lives.

The Government, in adopting the report of the Tuberculosis Committee, refuses to make payments to provinces for the help of dispensaries, sanitaria, etc., because of the possible establishment of a precedent. Those who are interested in the tuberculosis question will feel that the Government has lost an opportunity for showing its immediate interest in a subject that needs every helping hand it can get. Apart from political views entirely, this is a question where a parliamentary error might please the country more than a timorous safeguarding of the public pocket-book, and a grant to provinces in aid of this battle of to-day would, we venture to say, please the enemies of the Government more than pensions to ex-Cabinet Ministers please its friends.

The Counties of Perth, Wellington, Oxford, Waterloo and Brant, in Ontario, are taking active steps towards the erection of a joint sanitarium for consumptives. If a proper sum of money is voted for such an object, the building will be an acquisition to the county in which it is established, and the representatives of the counties other than the one selected must show a spirit of generosity which will look only to the site best fitted for the interests of the patients.

The Orangemen of Campbellton, N.B., have offered to contribute $4,000 in cash and value if the citizens will subscribe $3,000; the third story of the building is to be used as an Orange Hall, if the scheme is approved. We can already foresee a host of comment upon this from the jokers, but a hospital is generally a good thing, however it is built; but what will the patients do on the 12th of July?

At the annual meeting of the Council of the College of Physicians and Surgeons, held at Toronto on July 4th, the following were elected officers for the ensuing year:—Dr. A. A. Macdonald, of Toronto, President; Dr. W. H. Moorehouse, of London, Vice-President; Dr. R. A. Pyne, Registrar; Dr. H. Wilberforce Aikins, Treasurer; Dr. J. C. Patton, Auditor; Mr. Christopher Robinson, K.C., Solicitor.

With reference to the meeting of the Canadian Medical Association in Halifax, August 22nd to 25th, those who wish to secure accommoda-

tion in advance should communicate with C. Dickie Murray, M.B., 60 Queen Street, Halifax, who is the chairman of the Information and Lodging Committee.

Dr. Arthur R. Reynolds has retired from his position as Commissioner of Health, Chicago, after ten years' service. To whomever belongs the credit, during his term of office, the health of Chicago has greatly improved. Speaking without personal knowledge, it is yet safe to say that an efficient department in all probability has an efficient head.

Messrs. William Wood and Company announce a new edition of Cunningham's Text-Book of Anatomy, which is amplified, and will contain additional illustrations. The first edition was a thoroughly first class text-book.

St. Michael's Hospital, Toronto, is to have a new wing built, which it is estimated will increase the capacity of the hospital by 150 beds, and will cost $50,000. The hospital at present has accommodation for about 200 patients.

Grace Hospital, Winnipeg, under the management of the Salvation Army, will be opened shortly, in commodious buildings, which will be devoted partly to maternity work and partly to wards for children, besides having a part to be used for the rescue work of the organization.

The British Medical Association is invited to Toronto next year. Preparations have already been made in view of the acceptance of the invitation.

JOTTINGS BY A COUNTRY DOCTOR.

Accompanying the manuscript of this article we received the following letter from a *confrère,* and while we wholly agree with the writer that the article explains itself, the letter so exactly expresses the editorial opinion and judgment, that we publish it as a preface.—[The Editors.]

To the Editors:

After undue deliberation I send you the enclosed for the Journal. You will know that I am not an authority on therapeutics, and can perhaps understand that I am inclined to regard therapeutics as a science, and hold that this should be pursued as such, even if at times we are as hard pressed to justify ourselves as your friend the theologian must be at times to reconcile science and revealed religion. My good old correspondent, who subscribes himself "John Brandon, Ancaster, Ontario," I confess, has shocked me more than once by the cheerful and

vigorous way in which he worships strange gods in therapeutics. After all, as your theological studies may have impressed upon you, there is an interesting parallelism between medical practice and religion. The faith of the savage in his particular god, and the faith of the practitioner in any one particular medicine, has its basis, time and again, on no more powerful reason than, that, in some previous strait, invocation of that particular god, or the use of that particular medicine, has been followed in the one case by fulfilment of desire, and in the other by the wished-for improvement. The faith of those higher than savages, and the practice of the University Professor or specialist is too often established on a like basal confusion between *post hoc* and *propter hoc.* It is not because the good old doctor seems apt to follow after strange gods that these jottings of his are of value, so much as it is that they present a pleasant picture of the country doctor; cheery, enthusiastic, keenly observant, anxious to do his best, ready to do anything that may possibly be helpful to his patient. Indeed, on re-reading the letters I do not know that they need any introduction; they amply explain themselves; it is merely that I feel it necessary to explain my position as to an introduction.

I would add that in sending this material to you I have supplied headings, and to some extent re-arranged the order in which it has reached me.

A.

Ancaster, Ontario, November 27th, 1904.

Dear Sir and Brother:

I believe that you were guilty of breaking the ice between us, therefore, if I say anything that is not fit, blame yourself. I send you these notes of practice containing, some of them at least, something that is new, or at least, if not new, I have not heard about these matters or seen them in print. What I now write is thought out on the spur of the moment. I would like very much, however, to have your opinion of them—freely expressed; and if there is anything good in them, they are yours to make use of; if not, the fire is handy this weather. I am too old now ever to go to see you, much as I would like to see McGill once more before the end comes. Give my kindest regards to Alma Mater, and tell her that if I had money she should share it; but after all these years, when all is summed up, there remains little that I can call mine own, save the house and lot. What I had is gone; I trust well spent in bringing my family up and out,—but these matters won't interest you; forgive me.

I have arrived at that age—see your Calendar—known as the anec-

dotage, so if my ideas take the form of a story please ascribe this to my failing powers, and if you can give me assistance in answering my queries, do so.

On Taking Advantage of Exuberant Granulations.

Some years ago our Township Treasurer was murdered for the cash that he was supposed to have in his house—shot through the arch of the aorta. I was called to the case, by his man—after he was dead—and I went, as Coroner of the district. The man was frightened greatly, and so was his horse. Before he could get into the saddle the horse gave him a severe kick in the face, completely removing one of the nasal bones. There was no trouble with the nose except that the hole was in a region where it was not wanted. I need not tell you that the village or country doctor is not provided with a hospital outfit, and as to rhinoplasty, except to a very slight extent, I have not practised it. Of course I knew all about cutting out a piece of skin from over the forehead, leaving a stem, turning it over, and stitching fast—a great deal easier said than done—and leaving another hole higher up, like the Irishman mending a hole in his hedge fence. I dressed the hole in the nose with tartar emetic ointment—double strength—and made granulations spring up in great abundance and of great size. Finally the granulations closed the hole completely. I then dressed with some oxide of zinc ointment, and it healed over. Of course the bone is gone, and I might have made a better fix of it—or worse. The man, a German, 25 years of age, had before the accident an Irish pug nose; how come by it is not for me to explain; but when all was well it was a straight feature after the Grecian type. I have since used the ointment in several different cases: hare-lip, with unqualified success; diagonal amputation of the thumb across the nail in a boy—success qualified; the thumb grew out to full length after a lot of trouble, but the ball was wanting, and it is wedge-shaped. Still, I intend using this to fill up any hiatus, lacerated perineum, and so on.

As a student I remember seeing Dr. McCallum operate upon the evil results of exuberant granulations. One case I recall of fingers grown together after scalding with hot water, another of axillary adhesions of several inches. Did it, I wonder, occur to him, or to others, to utiliz these pathological overgrowths as a therapeutic measure? As to the agent to be employed to bring about exuberant granulations it makes little difference, convenience only being consulted.

On the Active Treatment of Lumbago.

In your last you rather hinted that you were not an authority upon

medicines, and, where possible, favoured treatment other than by drugs. If you are still of the same opinion then this story will suit you.

My respected father had the same weakness of intellect with regard to medicine to which I think you confessed—and as fortune favours a certain class of people—he had this experience. He had an attack of lumbago—no gentle one either. I need not tell you that he went to no doctor—for two reasons: First, there was none to go to, and, second, he would not had there been one next door. He lived in the county of Lambton, when it was fresh from its Maker's hands. The disease bent him double, but otherwise he was well. He went to see an old Irish friend, and together they discussed all the woes of Ireland from King Solomon down to Daniel O'Connell—we had no Redmond or O'Brien in those days, The settlement of the Irish question took a good long time, would that it had stayed settled! However, he had to go home, and had to traverse a large piece of bush between the two clearings. He also had to cross a stream on a log which acted as bridge. When he had got well started upon the log, he started the second time on hearing a snort before him. He looked up as well as he could, and there, also using the log for a bridge, was a big black bear, rearing himself upon his hind legs and getting ready for a fight generally. My father was not armed and could not run, or at least he thought so, so the two stood and surveyed each other as well as the failing light would permit.

At last the bear became impatient and jumped off the log into the water and waded through. My father improved the opening for escape and strategized, as the Yankees used to say, towards his base of supplies. When they both had crossed the stream, they had one more look at each other, and then separated. Oh, shades of Sheriffmuir! why did both sides run away? But they did, and the following was my father's version of the story, as nearly as I can remember it after 50 years:

The retreat began at once, but was retarded by an immense tree that had fallen across the blazed track through the woods. He cautiously laid his chest upon the log and rolled over it—rolled more easily than he had expected. The next log he put his hand on and sprang over lightly. The next and the next he never touched at all, and when he got home he was quite well; though he did not wish to be cured in the same manner a second time. As for the bear he made a seizure or two after some delay, and it was resented. He caught Harry Chalk's sow, and scratched both her sides with his finger nails, but for some reason had to let her go. The bear next scratched an acquaintance with Jim Crysler's pig, and had a real good breakfast. Soon after he called

on Jack Shepherd, upset a bee hive, took out a big handful of honeycomb, and was eating it with enjoyment, when Jack was mean enough to give him a charge of buckshot.

On the Treatment of Puerperal Convulsions.

Some years ago I was called to a confinement: nothing unusual, some slight difficulty in the last stage; gave chloroform and applied forceps; all well. Soon after, the severest puerperal convulsions set in that I have ever seen show themselves and the patient survive. I gave her pot brom. chloral hydrate and tr. hyoscyami in suitable doses, all in one mixture—8 oz. Soon after the first seizure came a second and a third. The jaws were firmly set, so it was useless to administer medicine that way. I therefore gave her the whole bottleful as an enema.

She went to sleep and slept for three days. I drew off the water twice a day, and did nothing else. She woke up safe and sound and remained well.

I have used the same treatment since in a case in which lockjaw was brought on by walking on a rusty nail, which pierced the foot. That boy—an English emigrant—could throw himself sideways from the sofa for three or four feet. He only slept until morning.

Did you ever try tartar emetic and tr. of iron in small doses in puerperal fever?—tartar emetic one-half grain, tr. ferri mur. guttæ xx, aqua ad four ounces—one teaspoonful every hour. Change it after 24 hours, as it is an unstable compound. I do not know its chemistry, but it soon becomes inert. Of course cleansing injections of potash permanganate are in order.

Static Electricity and Acute Endocarditis.

I want some information. I have had two cases of mitral valve disease. Of course I don't want you to understand that I never had but two, but I have had two lately; one due to rheumatism, the other associated with a phlebitis. These last two I have tried to cure with what is called electrical massage.* I cannot talk electricity any more than I can talk naval matters, but if the vegetations that are deposited on the cardiac valves are simply produced or rather eliminated from the blood by whipping it, the same as might be done *extra corpus* by a bundle of twigs, then the electricity with which the body becomes so highly charged, if it does not dissolve the fibrin matter, it seems to me, very possibly, causes it to lose its cohesiveness so that it breaks up.

* I take it that this electrical massage, from the doctor's description, must be of the nature of static electricity.

Having no life in itself, and not being a parasite proper, it has not vigour enough to resist an attack such as I have attempted to describe. Whatever the cause in about a fortnight after the treatment—there was but one—the first patient was suddenly freed from his apnœa, the swelling in the lower limbs became very much less, and a general improvement took place. He could lie and sleep on his left side, and several medical men pronounced it a cure without being informed of the means employed.

Case No. 2.—A young girl, of 14 or so, was seized with acute rheumatism. Her heart was affected early and nearly all the joints. The disease flitted from ankles to wrists, from wrists to knees, and even it seemed to me to the membranes of the brain. Wherever there was business to be done there it put in an appearance. Treatment: opium, fly-blisters and alkalies, with bromides to relieve the head symptoms. All went well, but the disease left her with vegetations upon the mitral valve. She is now undergoing electrical treatment at my recommendation and is greatly benefitted, but I imagine the valves have shrunken leaving a button-hole slit. Still there is very great improvement, with, I admit, plenty of room for more.

I want your opinion upon these cases to help me with a third. The patient is a woman of 45 or 50—I dare not enquire too closely—in which fibrin has been deposited in the pupil of one eye, filling up the anterior chamber, with fibrinous inflammation, also, of the cornea and external deposit; how far it extends inwards I cannot tell. The other eye is pretty nearly destroyed. At most with it she can discern light from darkness. My query is, would electricity be any use in this case? I have dissolved all the outer layers of it; that is to say, I have brought about resolution of the keratitis by dropping a grain of calomel into the eye once a week. A solution of cocaine saves the eye from the irritating effects of the calomel; but this amount was all she could endure, and lately I have given her one grain of calomel by the mouth at the same time, and I think the results have been beneficial. She can see in a bright light, as you or I can see in a dark room; that is all. I have tried atropine, but that has had no effect whatever upon the pupil; the iris must be bound down. The atropine used produced its other effects upon the throat, etc. How about electricity? If electrolysis can dissolve fibrin in one case, it also should in another. I should very much like your opinion—freely expressed.

As for calomel; I believe in it. I have removed a clot of fibrin from the eye of a man nearly 70 years of age. I would have had complete success but the calomel is only put in when I do it, and, as he

lived nearly ten miles away it is not often done. But even with this the result is excellent.

December 7th, 1904.

Your letter of a late date came duly to hand, and I feel duly grateful for the information which it contained regarding fibrin.

I admit that my pathology has become hazy with the years, and I had forgotten that in organization the inflammatory exudate gains a proper blood supply. I had regarded vegetations and so on as a semi-alive tissue living like Epiphytes, or something like a class of plants that Dr. Dawson used to tell us about—God bless his old soul—that lived on the predigested fluids of another plant. I see all our therapeutists are sending me literature about predigested foods for infants and sick people. Well, when it comes to that, that a man cannot eat his own victuals, he had better emigrate to a better land—unless, of course, he has plenty money. So I shall not yet try electrolysis upon this case of inflamation of the anterior chamber of the eye. I would only report to you that the fibrin appears to be breaking up, and the patient to be improving. After I put the calomel into the eye, she can see a blood vessel, she says, shaped something like a fern springing from the inner canthus; she assures me that she can see it, and I am obliged to believe her. I am very obliging with regard to some stories, but I want to believe this woman. She can describe its location and size as well as I can, and I read and write without glasses. I continue to give her internally one grain of calomel per week, for I believe that this has a tendency to break down half-alive tissues, and also wholly alive ones, but the lesser alive go first.

On the Antagonism of Ague and other Conditions.

The are a few cases within my recollection that make me ruminate occasionally and regarding which a little light from you will do good.

Case 1.

A young woman of about 15, who had not menstruated, had consumption. She was Irish, and lived in Dundas, three miles distant as the crow flies, which it does often. She lived on Coot's Paradise, as an arm of Lake Ontario is called. This arm is really the outlet of a former river—antedating Niagara—which came from the West, washing and grinding out with ice hummocks the soil to a depth of 500 feet, and leaving the debris in the lake in the form of a spit all the way across that is called "Burlington Beach," a strip of sand 200 yards wide forming the boundary to the northeast of Burlington Bay.

Coot's Paradise is filling up with alluvial matter and decaying weeds, and is the breeding ground of fish, birds, turtles, insects to no end.

You will understand that the shores of the creek are unhealthy in some seasons.

The case was one of consumption pure and simple at first. I was doomed to defeat and I knew it. She took the advice of a friend and went daily to the slaughter-house and drank bullock's blood fresh from the animal—and liked it. I didn't. However, this stopped as she had a severe attack of the ague and could not go for her favourite tipple. During the time that her ague proceeded, all the signs of the consumption not only abated but actually left her. I was convinced that, after all, my diagnosis was at fault so far as the consumption was concerned; not a trace of it was left. Auscultation and percussion gave no indications; she ceased to have night sweats and diarrhœa; in short, not to be tedious, I said to myself—I like to talk to myself, it is always confidential—"Old man, you were mistaken for once; what you have to do now is to make a quinine mixture and all will go well."

She took her quinine and the ague left her very easily. Now I know something about ague. I had it in my own proper person for 18 months, and the only exercise I took during that time was the shake of the ague. The form varied a little. What I remember best was a double tertian, a shake to-day at 11 a.m. and to-morrow another at 2.30 p.m. When I tell you that Kate Hurly had the ague there was no mistake.

As soon as I had cured the ague all the symptoms of the consumption returned, with greatly increased virulence. It seemed to me that it must have been going on all the time contemporaneous with the ague. And she died.

Case 2.

William McCormick, Irish, Sawmill owner, aged 38-40, married, with family.

He had consulted two or three medical men for an ulcer of the stomach. There was no improvement, and I was called to see him. Without doubt there was an ulcer of the stomach; also his lungs were rattling all over, and were half filled with mucus. I put him on hypophosphites, gave him bismuth trisnit with pulv. kino co., 5 grs. *aa ter in die,* and under this he seemed slowly to improve. But soon the ague developed, and it was a severe case. Here again the lungs cleared up as if by magic, the stomach ulcers healed over, and all was well. I left him to shake it off as best he could. His saw mill was located in the "Big Swamp," a hole in the course of the extinct river which I have mentioned. But here I may say that the extinction was brought about by two causes: one was the wearing away of the cataract at the Gallops Rapids, I think, and consequent draining of an immense fresh water

sea; the second was and is, that geologically we are rising. Still the dirty hole is left. I told him to leave his place, and to take nothing at all for the ague. He went down the Lake to his father's place, stayed out of doors, and got well and hearty. Some little time later called upon me. The ague, epigastric and chest trouble were all gone. Shortly afterwards I was told he had been removed to a Hamilton Hospital under the care of a so-called specialist, and that he rapidly became worse and died.

What I want to know is, how do these things happen? How in these cases did ague abolish for a time, or at least mask completely, all the symptoms of consumption? I once heard the late Professor Howard note the fact, but, if I remember aright, he laid it down, that when it does occur in the case of consumption it does good. In my cases the good seems only to be apparent, and the after effects quite the reverse. I don't want another such case.

I have at present a case of Colles' fracture—nothing unusual about the fracture. I reduced it under chloroform. It is uniting nicely. But about the 8th day the patient complained of a chill: no signs of fever of any sort. This occurred nightly at 6 p.m. three or four times in succession. The pain in the fracture after the chill was frightful, and once I had to give a subcutaneous injection of morphia. After two hours of suffering the pain left as suddenly and as mysteriously as it came. When these attacks had recurred three or four times their periodicity struck me. I thought there was something wrong with the fracture, but there was not a sign of inflammation or of disturbance of any kind. I gave her quinine powders and in 48 hours all was nearly well, at least greatly improved.

This particular form of ague showing itself after a fracture and associated with pain at the site of the fracture I had not previously come across in a patient. But it brought to my memory what happened to me when a young man. Lifting a heavy log I broke off one of the spines of one of my lumbar vertebræ. I did not know this at the time. Some days later I took the ague and it always began in that spot where the process was broken. The fracture healed without treatment, and I was unaware of it until it got well, when I found a thick ferrule of bone around the injured part. Can you suggest to me why these things should be?

On the Toxicity of Human Milk in Febrile States.

Some time ago I attended a young married woman in her first confinement. All went well until a few weeks later when my patient had a smart attack of some ephemeral fever—I forget now what it was or the cause of it. After examination duly made, I prescribed and dis-

pensed the treatment—for a country doctor must do both. I explained that the patient's breasts must be attended to, so I told her husband that he could either come to my office for a breast pump, or if it were possible to obtain a pup to suck the breasts it would do as well. He at once announced that the pup idea exactly suited him, as he had at that time a litter of four or five pups in the drive house, and he promised to attend to the directions. On my next visit I found all well; the mother had done famously; the child all right. The whole family including the grandparents and certain maiden relatives were all assembled and all seemed to be peculiarly happy, not to say hilarious, more so than could be reasonably expected. I looked over my personal equipment to see if any defect existed to cause mirth, but no, there was nothing there; being still in the dark, I began to seek an explanation. I asked the father how he had stood the ordeal; he said very well indeed, but if possible looked a little more pleasant than before, and this stirred me up to ask directly the cause of the mirth.

"You have not asked after the poop," was the answer I received.

"Well,' said I, "how did it fare?"

"You are too late," I was informed, "the poop is dead."

"Dead," I exclaimed, "how did it happen?"

"O, pulled well at one breast, and then pulled at the other, and then stretched itself out and was dead, and that is all there is to it."

Now, sir, in a country practice a pup is a very useful animal: it pulls famously and has no teeth. But this has not happened to me before. I think that I have read of a somewhat similar occurrence in an old edition of Carpenter's physiology, but that does not explain the matter. What changes took place in that breast milk enough to kill the pup? In Carpenter's case the disturbance was due to mental emotion, but there was no mentality in my case. Could the poison that caused the fever be eliminated through the mammæ, aided by a purge and a little aconite, and did the pup come in for the concentrated dose? What can it be that should destroy life so soon without a struggle? I can only say with the old maids present: "A good thing it was not the baby."

February 11th, 1905.

By the way yesterday I saw a photo of the man whose nose I reconstructed In the photo it is impossible to see the patch with the naked eye, and I have no microscope. I did not find the bone on my first visit, but it came out of the nostril and was not kept. My operation is not liable to the objection urged in "Hudibras" to the operation known as Tagliacotian. This man was healed by his own flesh. I believe that I can get you a photograph of the man if you are interested in a case of this kind.

Reviews and Notices of Books.

A Text-Book of Obstetrics. By Adam H. Wright, Toronto. Illus. 8vo. Published by D. Appleton & Co. Cloth, $4.50.

This book is full of the author's personality, and calls to mind the style of Denman's Obstetrics, first published in 1815, and for many years a most popular work both in England and America.

Dr. Wright has produced an interesting book upon the *art* of obstetrics as distinguished from its science, though in the few places where reference is made to science no particular fault is to be found. On the whole, in this scientific age, such a work comes as a surprise, though perhaps it loses none of its charm by this deficit to many readers.

The reviewer has perused its pages with interest and not without profit, for it impresses one with the sincerity and earnestness of its author, who is evidently well read and thoughtful, and a good type of the careful, competent practitioner.

The work opens with a quotation from Longfellow's Hyperion, dealing with the fatuity of speculative knowledge, which, taken along with the following sentence on page 28, fully expresses the author's central idea in producing this work:—"It appears to me that there is at the present time considerable danger that we are cultivating science at the expense of art in our profession."

Hence, one is not surprised to find scant reference to the etiology of many conditions of the highest interest to the scientific obstetrician. For example, the part dealing with embryology is weak, and the author's remarks in reference to the embedding of the ovum and development of the placenta is antiquated and incorrect.

Having pointed out these few defects, it is a pleasure to dwell on the many good qualities of this latest contribution to the literature of obstetrics.

Of special interest on account of clearness, accuracy and often original presentation are the chapters on mechanism, the third stage of labour, the treatment of vomiting of pregnancy, the relation of appendicitis to pregnancy, and also, the most valuable of all, the chapter on tuberculosis.

In many instances the author illustrates his point by reference to cases he has encountered, and gives careful and interesting reports when so doing.

The author has very strong views on the subject of milk diet whether in typhoid or in the toxæmia of pregnancy. He hesitates about denouncing it completely, but concedes its value in the case of young infants and calves, though he does state frankly that, in his opinion, it is unsuitable for adult human beings.

The general arrangement of the work is about as usual, being divided

into parts, physiological and pathological. The style, as has been said, is good, and the book will be found extremely interesting reading by the physician, and will no doubt be a very popular work among students.

The illustrations have been well done, and not, as in many recent books, overdone. The publisher's work leaves little to be desired, and is quite up to the usual good style of the Appleton publications.

DIAGNOSIS OF DISEASES OF WOMEN. A Treatise for Students and Practitioners. By PALMER FINDLEY, B.S., M.D., Assistant Professor of Gynæcology and Obstetrics, Rush Medical College, in affiliation with the University of Chicago; Assistant Attending Gynæcologist to the Presbyterian Hospital, Chicago. Second Edition. Lea Brothers & Co., Philadelphia and New York. 1905.

This is the second edition of Findley's book, "Gynæcological Diagnosis," which appeared two years ago.

The title has been changed, and changed for the better. Ninety-four pages and twenty-six illustrations have been added in this new edition. These additions constitute two new chapters; one on the Blood, the other on Bacteriological Examinations, while much has been added to the chapters on Disease of the Urinary System. It is manifest that there is ample room for a work of this description, for, as Findley himself says in the preface of the earlier edition, there is no other text-book of the kind in English. Morever we agree that there is need of such a book, so cumbersome and page-burdened has the adequate general text-book already become, and we may truthfully add that this first "Treatise" justifies its place, and answers the requisition in a thoroughly able and satisfactory way.

While the book is barren of literary quality, the text is always clear and is generously illumined by engravings and plates. The weakest chapter is the one on "Bacteriological Examinations," the very chapter in which we anticipated strength. No adequate description of the flora of the genital tract is given, and methods of examination are not even mentioned. The work here in no way compares with the corresponding chapters in the general text-books of Dudley or Hart and Barbour.

The chapter on Blood Examination is specially good, as are also those in Hydatiform Mole, Chorio-Epithelioma and Carcinoma of the Uterus.

Plate XXII, where the fœtal remains in a tubal pregnancy are represented as occupying the centre of the lumen of the Fallopian tube, is surely incorrect, for even in Fürth's two and a half week's tubal pregnancy, the earliest described, the ovum was found entirely outside the lumen of the tube, entirely submucous.

The book will appeal more strongly perhaps to the student, for, speaking generally, the pathological aspect is its strong feature. The

work here is first-hand, excellent and extremely valuable, especially the microscopic descriptions and drawings. For this very reason Findley's work is deserving of the warmest welcome.

MANUAL OF DISEASES OF CHILDREN. By JAMES BURNET, M.A., M.B., M.R.C.P. (Edin.), Registrar and Assistant to the Extra-Physicians, Royal Hospital for Sick Children, etc., etc., Edinburgh. Edinburgh: E. and S. Livingstone. 1905.

This small book of 400 pages aims at giving but a brief outline of pædiatrics for the use of practitioners and students who are beginning the study of this subject. While the utility of such a work may be questioned, one cannot but feel that the author has accomplished his task well in regard to brevity. With the space at his disposal, much of the subject matter is of necessity too condensed to be of practical use. Of eighteen chapters, three are descriptive of diseases of the skin, and special sense organs. These, we think, would better have been omitted. It is hardly reasonable to expect a student beginning the subject of pædiatrics to profit by or even understand the very meagre description of skin diseases which can be crowded into a few pages, and the same can be said for the other special subjects. There are in the book many small errors which show want of care in its preparation, but these, no doubt, will be eliminated in a later edition.

A SYLLABUS OF MATERIA MEDICA. Compiled by WARREN COLEMAN, M.D., Professor of Clinical Medicine and Instructor in Materia Medica and Therapeutics in Cornell University Medical College; Assistant Visiting Physician to Bellevue Hospital. Second Edition. New York:: William Wood & Company. 1905.

This useful little book is intended as a supplementary pocket volume to text-books, and not as a text-book. The main difference in the second edition from the first is the amplification of that part of the work dealing with minor toxic actions and toxicology. The book is a very good pocket consultant for use in a hurry.

Medical News.

CANADIAN MEDICAL ASSOCIATION, HALIFAX, N.S., AUGUST 22ND TO 25TH, 1905.

PRELIMINARY PROGRAMME.

President's Address—Dr. John Stewart, Halifax.
Address in Surgery—Mr. Francis M. Caird, Edinburgh, Scotland.
Address in Medicine—Dr. D. A. Campbell, Halifax.
Address in Gynæcology—Dr. Howard A. Kelly, Baltimore.

Address in Opthalmology—Dr. J. W. Stirling, Montreal.

Discussion—Renal and Ureteral Surgery. Introduced by Dr. A. Primrose, Toronto.

Two Cases of Retro-Ocular Neuritis—Dr. Geo. H. Burnham, Toronto.

Paper, title to be announced—Dr. H. A. Bruce, Toronto.

The Symptoms, Diagnosis, Prognosis and Treatment of Neoplasms Affecting the Central Nervous System—Dr. D. A. Shirres, Montreal.

Chorea, with an Analysis of 130 Cases—Dr. Robert King, Halifax.

Rare Forms of Aneurysm—Dr. Maude E. Abbott, Montreal.

The Buried Suture—Dr. J. M. Elder, Montreal.

Dentigerous Cysts, and the Removal of the Inferior Dental Nerve for Tic—Dr. M. C. Smith, Lynn, Mass.

Combination Operation for the Radical Cure of Inguinal Hernia—Dr. F. N. G. Starr, Toronto.

Two Case Reports : (1) A Case of Chylo-Thorax; (2) Further Notes on a Case of Myelogenous Leukæmia, with Disappearance of the Splenomegaly and Myelocytes—Dr. D. G. J. Campbell, Halifax.

Physical and Clinical Researches on Radium — Dr. Myron Metzenbaum, Cleveland, Ohio.

Prostatectomy—Dr. E. W. Cushing, Boston, Mass.

The Surgery of the Stomach in Non-Malignant Conditions—Dr. Geo. E. Armstrong, Montreal.

Dislocations (with lantern demonstration)—Dr. J. Alex. Hutchison, Montreal.

The Fever of Late Syphilis—Dr. Arthur Birt, Berwick, N.S.

Postural Albuminuria of Children—Dr. W. H. Eager, Halifax.

The Prodromata of Insanity—Dr. W. H. Hattie, Halifax.

The Treatment of Smallpox without Pitting—Dr. Archibald Leitch, St. Thomas, Ont.

Tracheotomy as a Remedy in Severe Whooping Cough—Dr. A. B. Atherton, Fredericton, N.B.

Recent Fracture of the Clavicle, with Operative Treatment—Dr. J. W. T. Patton, Truro, N.S.

In addition to the foregoing, several have promised papers, but have not yet decided upon the title of same.

The annual meeting of the council of the College of Physicians and Surgeons of Ontario began on July 4th. The following officers were elected: President, Dr. A. A. MacDonald, Toronto; vice-president, Dr. W. H. Moorehouse, London; Dr. R. A. Pyne, registrar; Dr. H. Wilber-

force Aikens, treasurer; Christopher Robinson, K.C., counsel; Dr. J. C. Patton, auditor; Charles Rose, prosecutor, and John Downey, reporter.

The death of Prof. von Mikulicz-Radecki, of Breslau, which occurred a few weeks ago, removes from scientific circles a man who can be ill-spared; his death resulted from cancer of the stomach; some time ago he was operated upon, and the disease could not then be eradicated. Recovering from the operation, he went back to work, awaiting the end. Members of the profession here, among whom he numbered some intimate friends, will recall his visit to Montreal a couple of years ago.

Dr. Johnston, Member of Parliament for West Lambton, Ont., died on July 4th, at Ottawa, of septicæmia, following erysipelas. He graduated from the medical department of McGill University, in 1871, since which time he has practised in Sarnia. He devoted considerable attention to public affairs, was Mayor of Sarnia, and sat in the Dominion House from 1898 to the time of his death. He was 56 years of age.

Professor Hermann Nothnagel died early in July, in Vienna. Apart from his fame as a clinician and a teacher his name will be known in the medical world for long time to come by reason of the magnificent system of medicine which has been collaborated under his direction.

Dr. D. L. Philip died at Brantford, Ont., on the 11th July, at the age of 66. He was a graduate of McGill Medical College in 1861, when he obtained the Holmes' Prize, and the first prize in clinical medicine. He practiced in Woodstock, Plattsville and Brantford.

Dr. J. C. E. Roberts, uncle of Charles G. D. Roberts, the author, died June 15th, at Rimby, Alberta, aged 66 years.

Dr. Morin, of St. Agapit, Que., died on the 8th July, aged 69.

Dr. C. G. Lange, of Sinclair, died in Brandon Hospital, on July 4th.

Retrospect of Current Literature.

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

William K. Otis, M.D. "A New Electro-Cystoscope." *Lancet*, June 10, 1905.

Over twenty-five years have passed since the invention of the electro-cystoscope by Nitze, and, although many modifications of it have been presented during this period, no one has succeeded in improving the ocular apparatus, so that the cystoscopes of to-day are no better than those manufactured by Hartwig or Leiter in 1887. The real optical difficulty which prevents an enlargement of the field, or an increase in

illumination in the Nitze instrument is due to the use of the prism as a means of diverting the light rays in order to obtain a rectangular view. The present instrument resembles in general the cystoscope of Nitze, but in place of the prism the writer has substituted for it a hemispherical lens, the plane surface of which is silvered, a portion of the circumference filling and closing the window in the outlet tube of the instrument. Other important modifications are the lamp and the device for insulating the second pole of the lamp. The lamp is so prepared that it has such a low amperage that it emits almost no heat. It is situated at the extreme point of the beak, which latter is but one-half of an inch long and set at an obtuse angle. As a result, the light unimpeded by any metallic hood, illuminates the whole interior of the bladder. The advantages claimed are a much more brilliant light, the field of view is four times the area of the instruments now in use, and is rendered clearer and brighter on account of the more powerful illumination of its lamp, the greater calibre of the telescopic tube (20 F.), and the arrangement of the lens system. The lens is so arranged as to render it impossible to be soiled by blood, pus, or lubricant. The instrument can be used with a liquid or air medium. The telescopic part can be removed completely and this gives a much larger calibre for irrigation, the outer tube remaining in situ. The short beak and absence of the flat top and sharp angular sides of the prism render it easy of introduction and less liable to cause bleeding.

F. C. Bottomley, M.D., B.C. "The Causes of Appendicitis." *The Practitioner,* June, 1905.

The causes of appendicitis are considered under the three following heads: First, as to the varieties of micro-organisms found associated with the disease; secondly, why this part of the bowel is more liable to inflammation than other parts, and what conditions of the appendix itself prepare the way for attacks; and third, what are the predisposing causes in the individual himself. The article may be described as a concise statement of the generally accepted views on the subject, nothing new being added to our knowledge regarding the causes of appendicitis.

L. Kendirdjy and V. Burgaud. "149 Cases of Medullary Anæsthesia by Stovaine." *La Presse Médicale,* May 31, 1905.

During the last two years the attention of the profession has been called to a new substitute for cocaine, stovaine by name, which is said to be only half as tonic as cocaine, just as effective—and somewhat cheaper! The drug having been discovered by a Frenchman, the

literature is so far mainly French. To judge from this literature, it would seem that the most promising future for stovaine lies in spinal anæsthesia. The toxicity of cocaine gave to Bier's spinal-cocainization the *quietus* it deserved; but now comes stovaine, and the keen Parisian, ever eager and perhaps a trifle over-enthusiastic in new lines, is quick to assure us that he has subjected so and so many cases to spinal "stovainization" without the least ill-result.

The author of the present article, Kendirdjy, of the Hôpital Cochin, in Paris, reports 140 cases of spinal stovainization; which, with 64 previously published, make a total of over 200 cases. About as many more have been reported by several other Parisian surgeons, notably Chaput, Reclus and Puffier. Such names demand for the procedure at least the benefit of careful consideration.

Kendirdjy claims a total absence of any serious symptom. In two cases, during operation, there was vomiting, in three relaxation of the anal sphincter, in one profuse sweating. The general condition as regards pulse, respiration, colour of the face, etc., was perfect in all cases.

After operation, headache, usually slight and transitory, was noted only in 12 cases; fever above 100° was always absent; vomiting occurred in five cases, but was very slight. The net results, therefore, appear to be extremely good. Sonnenburg, of Berlin, hails stovaine as a drug "destined to revolutionize the question of anæsthesia." Bier himself, according to the author, who had given up spinal cocainization, has lately resumed the procedure with stovaine.

In conclusion, the reviewer would note that, in a previous article by Chaput, one death had to be reported, following the use of a rather high dose of the drug, 8 centigrammes; still it was found at post-mortem that the case presented an extensive patchy pachymeningitis of the cord, which probably contributed to the fatal issue. For all operations below the pelvis, a dose of 3-5 centigrammes appears to be both safe and efficient.

Otto Simon. "The Operative Treatment of Complete Bowel Obstruction." *Beiträge z. Kl. Chir.* May, 1905.

It is no long time since the internists came round to the point of considering all cases of bowel obstruction as belonging to the surgeon. So recently as 1889, Goltdammer advised strongly a routine preliminary treatment of large doses of opium; those that did not improve—or die—the surgeon might have a try at. Perhaps in no other line of therapy has Billroth's mot, "Die innere medicin müsse mehr chirurgisch werden," been realized more fully.

Simon in the present article reviews all the cases, in number 51, of complete bowel obstruction occurring in Czerny's clinic during the period 1890-1903. Of the 51, 30 died. Only four came to operation in the first 48 hours, and of these three recovered. The value of early interference is therefore insisted upon, and emphasis is laid upon Kocher's dictum that the chief cause of death in obstruction cases is delay. When the bowel is gangrenous, simple enterostomy is preferable to the more serious resection. Primary resections of obstructing tumours are to be avoided. Preliminary stomach washing is strongly advised. If peritonitis is already present at operation, an enterostomy is advisable.

Hermann Kummell. "Observations in 1,000 Cases of Appendicitis." *Deutsche Med. Woch.* April 20, 1905.

The author's figures are briefly as follows:—

1. 695 interval cases, 4 deaths (57 per cent.), one dying of peritonitis, two of pulmonary embolus, one of pneumonia.
2. 49 early operation in acute cases, 3 deaths, 6 per cent.
3. 178 walled-off abscesses, 18 deaths, 10 per cent.
4. 82 diffuse peritonitis, 73 deaths, 89 per cent.

With reference to the case of peritonitis, the remark is made, almost pathetically, "An infection from without, entered through us; its cause remains unknown to me." In interval cases, his rule is to wait four to six weeks after the disappearance of signs of acute disease.

Busquet and Bichelonne. "A Case of General Infection by Gonococcus with Secondary Localization." *Revue de Med.*, 1904, p. 433.

The case was that of a soldier, who had had six months before operation a hæmatoma on his leg. Fourteen days after the onset of a gonorrhœal attack, this became the site of a purulent swelling, and gonococci in pure culture were found in it.

MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY, H. A. LAFLEUR AND W. F. HAMILTON.

Prof. A. Fraenkel. "Cardiac Asthma and Anginia Pectoris." *Deut. Med. Woch.*, April 13, 1905.

Cardiac asthma and angina pectoris are amongst the most frequent symptoms of organic heart disease. Although not infrequently associated or occurring in alternating paroxysms in the same patient, they are distinctly different, both in their etiology and symptomatology.

Disturbances of the respiratory functions present certain variations according to the nature of the cardiac affection. It is well recognized that cases of aortic insufficiency often last for years without marked respiratory difficulties, whilst in initial disease dyspnœa on exertion, or even at rest, is a prominent symptom. In the latter case the pulmonary circulation is continuously overfilled, and this is only rectified by hypertrophy of the right ventricle. Most cases of arterio-sclerosis and cardiac hypertrophy resemble aortic disease in a long period of freedom from breathlessness, and failing compensation often shows itself by paroxysmal or asthmatic attacks of dyspnœa.

The attack of cardiac asthma frequently occurs after some strain thrown on the heart, such as muscular exertion, mental strain or excitement or overloading of the stomach. The onset is commonly at night, within a few hours after falling asleep. It soon becomes necessary for the patient to assume the sitting posture or to leave his bed; cyanosis of the face, cold extremities, a feeling of oppression and sweating are observed, whilst rales are heard at a distance and there is a tough brownish sputum. The character of the pulse varies during the attack. Not infrequently it is of high tension and perfectly regular; in others irregular, and in a third class a low tension and irregularity indicate a high degree of cardiac weakness. In severe and oft repeated attacks, signs of venous stasis, such as œdema, lymphatic enlargement and albuminuria ensue.

Such attacks well deserve the term "Cardiac Asthma," and are frequently seen in arterio-sclerosis and interstitial nephritis. Although occurring in valvular affections they are seldom so unexpected and are more an exacerbation of a preceding dyspnœa.

Both types of dyspnœa owe their origin to congestion in the pulmonary circuits. Traube regarded the congestion of the lung capillaries and consequent encroachment on the lumens of the alveoli as the chief factor in the dyspnœa. All portions of the lung, however, share in the congestion and overfilling of the capillaries and veins, including those of the bronchial mucosa, and consequently in the smallest tubes this swelling must offer a considerable obstacle to the entry of air, altogether apart from the increased secretion in the tubes.

It is not clear why typical asthmatic attacks occur more frequently in arterio sclerosis and in nephritis than in valvular lesions. Apart from cases where constant venous hyperæmia is present, such as mitral stenosis, the chief cause of cardiac dyspnœa must be sought in the anatomical condition of the heart muscle. When fatty or fibroid changes set in the period of dyspnœa soon follows.

Attacks like those of cardiac asthma may also arise from reflex causes, such as overloading of the stomach, even with intact heart and vessels. The syndrome known as peptic asthma falls in this class.

The pulse is usually quickened, and sometimes the tachycardia may be so violent as to induce a cardiac dilatation.

In the treatment blood-letting is very efficacious where the blood tension is high. Spontaneous hæmorrhage, such as epistaxis, is often followed by relief, often lasting for a considerable time. Small repeated blood-lettings, either by leeching or by opening a small vein, are commended, and preferably before an attack should any warning shortness of breath present itself. In sudden attacks digitalis, caffein or strophanthus, combined with a hypodermic of morphia, prove most efficacious. Cases with high arterial pressure and regular pulse respond better than those with a feeble and irregular pulse. In the latter case degenerative changes are frequently present in the muscle, and the drug is therefore ineffectual. The observation has often been made that the pulse becomes softer after the administration of digitalis, owing to lessening of the congestion in the lungs and the better ærated condition of the blood. Morphia hypodermically is, however, the best remedy to cut short such attacks, and the writer points out that its action is a tonic to the heart. Chloral or chloralamid, camphor and inhalation of oxygen are also useful, whilst the various hypnotics are of much less value.

The second portion of the article is devoted to an excellent account of this malady, but contains nothing remarkably new.

Schlesinger. "On Periodically Appearing or Paroxysmal Paralysis." *Wien. Klin. Woch.*, March 30, 1905.

This condition, first described by Westphal, is now recognized as a well defined clinical picture.

Oddo and Audibert describe the malady as being frequently, but by no means always, an hereditary affection, characterized by a temporary, more or less generalized loss of voluntary movement, with loss of tendon reflexes and marked disturbances of electric irritability, but without defects of sensation or of the intellect.

In the case reported by Schlesinger a muscular man of 26, without hereditary or family neuropathic tendencies, suffered from his 16th year from periodic attacks of slight paralysis of the greater number of his voluntary muscles, those of the head and neck, however, always escaping. The tendon reflexes and faradic irritability were lessened or lost, but the direct mechanical irritability of the muscles was in-

creased. Slowing and irregularity of the pulse occurred during the attack and passed off at its conclusion. Acetone, albumen and casts appeared occasionally during the attacks. Apart from the paræsthesiæ and pains there was no disturbance of sensation. The attacks commonly occurred on Mondays, being present on waking and accompanied by profuse sweating. In the intervals the patient remained perfectly well and without disturbance of the tendon reflexes, faradic or direct mechanical irritability of the muscles.

The appearance of the attacks on certain days has been noted by other writers. On one occasion the author observed increase of tendon reflexes and spasm toward the end of an attack, and, as it passed off rapidly, he thinks it possible that such phenomena must occur and be overlooked.

Anomalies of cardiac action frequently occur, usually arythmia with evidence of dilatation of the right ventricle. Bradycardia present in this case has not been noted previously. The writer regards this slowing as due to vagus stimulation and depending on the same causes as that inducing paralysis of the voluntary muscles.

Different theories of the origin of this remarkable form of paralysis have been put forward, and the author leans to that of an auto-intoxication. The presence of acetone, of evidences of renal irritation and of profuse sweating during the attack support this view.

Dr. O. Kurpjuweit. "On Fatal Anæmia in Old Age." *Deut. Arch. Klin. Med. Bd.* 82.

In a series of 80 cases of pernicious anæmia, Kurpjuweit describes two instances in elderly men, which presented unusual features. There were in both cases features suggestive of pernicious anæmia: a considerable grade of anæmia, weakness, loss of flesh, hæmorrhages, fever and splenic enlargement were present in both instances. Both ran a fatal course in a few months, and the autopsies showed pallor and hæmorrhages, a flabby and cloudy state of the heart muscle, and an increase in the amount of iron in the internal organs.

The blood and bone marrow lacked certain distinctive characters of pernicious anæmia. A considerable grade of anæmia was present, the amount of hæmoglobin corresponding to the corpuscles in one instance and showing a slight relative deficiency in the other. The white cells were diminished and the lymphocytes increased. Poikilocytosis was only slight, whilst cells derived from the bone marrow were extremely scanty, a single normoblast being found in one and a few myelocytes in the other.

The bone marrow largely disappeared and showed areas of necrosis and hæmorrhage not seen in typical cases of pernicious anæmia. The writer sums up his conclusions by stating that in old people there is a primary chronic anæmia of moderate grade, with splenic tumour, trifling poikilocytosis and excessive leucopenia and without the essential bone marrow elements. There is a moderate or high temperature and a fatal termination. The signs of a hæmorrhagic deathesis appear late and only to a trifing degree. The bone marrow shows complete atrophy or the signs of acute destruction.

Dr. J. Ruhemann. "Ueber die Filatow-Dukessche Krankheit." *Diet Med. Woch.*, January 19, 1905.

The writer records briefly a series of cases of this malady. It derives its importance from its resemblance to scarlatina. The incubation period is from 9 to 21 days, and the malady exhibits its infectious character by frequently attacking two or more members of a family.

The disease is distinguished from scarlatina by the absence of vomiting at the onset, the moderate and rapid fall of temperature, the relatively good condition and trifling subjective discomfort, the absence of desquamation and of complications. A history of previous scarlatina is sometimes present and greatly assists the diagnosis.

The eruption resembles scarlatina but disappears in two or three days without desquamations. The tonsils are reddened, bu there is no severe throat infection. It is apparent that a disease with such characters may readily be confused with scarlatina; the most important features in the diagnosis are a previous history of scarlatina and an absence of desquamation. *F. G. F.*

PATHOLOGY.

UNDER THE CHARGE OF J. G. ADAMI.

Muszkat. "A case of 'Bronchial Kolik'; the result of broncholithiasis." *Berl. Klin. Woch.*, June 19, 1905.

Stern reported in the *Deut. Med. Woch.*, No. 39, 1904, three cases of "lung-stones" and the author's case is an additional one. Poulalion differentiates these, according to place of formation, into parenchymatous and intracanalicular. The former can occur in the bronchi, the lung tissue, the pleura and the bronchial glands; in the bronchi it may be due to a calcification of the cartilage or of the mucosa itself, and occurs in cases of "chalk-diathesis." The intracanalicular stones are from stagnating secretion in a bronchus or a cavity. As general causes Muszkat considers that great production of calcium phosphate

and carbonate in the body are most important; the local cause is generally a calcareous change of necro-biotic tissue or new-formed fibrous tissue; if in the bronchi, fibrin or blood clot, bacteria or foreign body may give rise to the stone. Diagnosis will generally depend upon the appearance of the stone after coughing, though fluoroscopic examination may reveal it.

WESTENHOEFFER. "Pathological Anatomy and Route of Infection in Cerebro Spinal Meningitis." *Berl. Klin. Woch.*, June 12th, 1905.

The author's conclusions from a study of considerable length are briefly that the mode of entry is chiefly by way of the nasal cavity, especially by way of the lymphoid tissue therein; the meningitis is generally basal, and in the region of the hypophysis; it rarely occurs secondary to ethmoidal disease, is essentially a disease of children and growing adults of lymphatic constitution; the combating of the disease is a question of hygienic surroundings, and the author thinks that while the meningococcus of Weichselbaum is found in the majority of cases, it cannot be considered the only excitant. Sometimes other bacteria, alone or in combination with the meningococcus, are found, and this, he thinks, points in the direction of the true cause being yet undiscovered, in which case, the meningococcus, as well as the others, plays a rôle analogous to that of streptococci in scarlet fever.

GRAWITZ. "Observations on the Cases of Meningitis of the Present Year. *Ibid.*

This author proposes that we substitute the term "contagious" for "epidemic" in our terminology, as he says, truly enough, that there is often no true epidemic.

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v. LINGELSHEIM. "Statistics of Bacteriological Examinations in Epidemic Cerebro-Spinal Meningitis. *Deut. Med. Woch.*, June 29th, 1905.

Contrary to the ideas of Westenhoeffer, v. Lingelsheim considers it proven beyond doubt that the meningococcus is the cause of this disease. In 243 lumbar punctures, the organism of Weichselbaum was found in 138 cases, though most of these required both microscopic examinations (smears) and cultures to prove its presence; 76 times it was in pure culture, 62 times mixed with other germs. In 139 autopsies it was obtained pure in 68. Of 430 examinations of blood for agglutination, 146 were positive. A later series of 57 cases gave 26 positive results; 37 autopsies gave but 8 positive results. His observations in

the nasal cavities in healthy persons, as a whole, did not indicate the frequent presence of the organism.

HERXHEIMER and HUBNER. "Observations upon Spirochæte Pallida in Lues." *Deuts. Med. Woch.*, June 29th, 1905.

These observers find spirochæte pallida in the secretion from the local manifestations of secondary lues in 16 cases; this spirochæte, if we mistake not, was described first by Schaudinn, and frequent observations of late indicate that it is a very constant factor.

QUADRONE. "Clinical and Experimental Investigation on the Effect of Röntgen Rays." *Zentralblatt f. Innere Medizin*, June 17th, 1905.

The author sounds a note of warning against the abuse of radiotherapy. He says that exposure must be made with due care as to duration and frequency, on account of the ability of the rays to injure organic tissues, especially in patients who are no longer young or who are weakened by disease, because as a result of the insufficiency of their excretory organs they are predisposed to auto-intoxication. His experiments were made in vitro upon leucocytes and active sera.

GRUNBERGER. "Upon the Finding of Diacetic Acid in the Cerebro-Spinal Fluid in Diabetic Coma. *Zentralblatt f. Innere Medizin*, June 24th, 1905.

Grünberger, in the Clinic of v. Jaksch at Prague, found diacetic acid in the fluid obtained by lumbar puncture from a 16-year old diabetic, who was in coma. This was shortly after the appearance of diacetic acid and B-oxybutyric acid in the urine. Acetone had been present in the urine for some time.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The eighteenth meeting of the Society was held Friday evening, June the 16th, Dr. J. A. Macdonald, president, in the chair. This being the last meeting of the year, the following office-bearers were elected for the session 1905-06:—

President—Dr. F. R. England.
Vice-President—Dr. F. G. Finley.
Secretary—Dr. A. H. Gordon (re-elected).
Treasurer—Dr. A. T. Bazin (re-elected).
Trustee—Dr. H. S. Birkett.

GANGRENOUS INTUSSUSCEPTION OF SMALL INTESTINES:

JAMES BELL, M.D.—"Gangrenous intussusception of Small Intestines."—G. S., aged 18, was suddenly seized with collicky pain over the abdomen on the morning of Thursday, May 25th, 1905, which compelled him to take to his bed. After a couple of hours vomiting occurred, but no bowel movement nor passage of flatus took place after the onset of this attack. On the 29th of May, at ten a.m., the abdomen was opened in the middle line below the umbilicus, and an intussusception of small intestine into small intestine was found. There was free fluid in the abdomen and the intussusceptum was gangrenous in places. After an ineffectual attempt to invert the mass still further into the healthy bowel, after Maunsell's method, the whole mass was excised, and the ends united with a Murphy button. In all, sixteen inches were excised, and the abdomen closed.

This patient never fully rallied, and died at twelve o'clock at night.

M. St. J., age 12, was admitted to the Hospital on 28th May, 1905, with evidence of intestinal obstruction. Her illness had begun on the Monday previously, the 22nd. During that day she had had slight colicky pains in the abdomen, mostly in the lower right quadrant. In the evening she took a purgative and vomited. She had had no vomiting during the last two days. On the Thursday, she had an enema, which was moderately effectual. Neither stool nor flatus was passed from that time. At 10 p.m., an hour after admission, the abdomen was opened and intussusception of small intestine into small intestine was discovered. Sixteen inches were removed. The bowel ends were united by Murphy button and the abdominal wound closed. The lower section of the intestine was about ten inches from the ileocœcal valve.

This patient had made an uneventful recovery, and passed the Murphy button on the 4th of June, just seven days after operation.

CEREBELLAR TUMOUR:

JAMES BELL, M.D.—"Cerebellar Tumor."—C. McI., aged 26, was referred to me by Doctor Hamilton, on the 25th May, 1905, with symptoms of cerebellar tumor. His illness began about the new year (January, 1905), with headache and vomiting. He was admitted to the Hospital, about the end of March, and was carefully examined. No ataxic, ocular or other localized signs were then discoverable. On the 7th of April the first signs of optic neuritis were discovered, and on the 16th of April ataxia was discovered. His symptoms were progressive. He lost flesh. He had on one occasion definitely, and on

another, perhaps doubtfully, a few moments of an aphasic condition. There were no other regular localizing symptoms, and there was no fever. From the facts that the ataxia and optic neuritis were marked signs, the tumor was thought to be cerebellar. On account of the history of the aphasic condition and the general tendency to refer his pain more to the left side, it was thought to be left sided. These were practically the only definite localizing signs, and the skull was opened below the curved lines of the occipital bone on the left side, and the tumour discovered and removed from the inner border of the left cerebellum.

The tumor has been shown to be of tubercular origin.

The patient rallied well from the operation and so far has done extremely well. He has not vomited since the operation, nor has he had any of the old headache, from which he suffered for five months.

An examination of the eyes one week after operation showed no discernible difference from the previous examination on the day of operation.

The patient sleeps well, eats well, and does not suffer at all, except sometimes from "pain in the eyes," as he expresses it. His vision is about the same, or perhaps a little better than before operation, but there has been no very decided change in this respect.

EXCISION OF LARYNX AND PORTION OF PHARYNX AND ŒSOPHAGUS.

James Bell, M.D.—"Excision of Larynx and Portion of Pharynx and Œsophagus."—M. B., female, age 29, came under my care May 18th, 1905, with a diagnosis of pharyngeal cancer, invading the larynx posteriorily.

She had had a painful throat for three or four years past, at every change of weather, but these attacks lasted only three or four days at a time and then disappeared. Since the beginning of the past winter, her throat had become painful and continued so without much change until six weeks ago, when it became worse. She had great difficulty in swallowing on account of the pain produced by the effort. A portion of the growth was removed by Dr. Birkett, and examined by the pathologist, and pronounced to be epithelioma.

On the 7th of June a mass consisting of the larynx, uppermost three quarters of an inch or an inch of the œsophagus and pharynx up to the hyoid bone was removed. The patient was placed in a semi-inverted position. Chloroform was used as the anæsthetic, and the larynx was separated from the surrounding tissues, cut off from the trachea, just below the cricoid cartilage, and the end of the trachea drawn through a transverse wound in the skin below the thyroid gland. The mass, in-

cluding the larynx, pharynx, and upper end of the œsophagus was then dissected upwards and removed. The serious problem of the case then presented itself, namely, how to provide a pharyngeal connection between the mouth and the œsophagus. There was a space of three inches devoid of mucous membrane. Several propositions suggested themselves, but, in the end, I brought up as far as I could the posterior wall of the œsophagus and attached it to the prevertebral tissue, and in the same suture included the remnant of pharyngeal tissues from above, which was also anchored to the prevertebral tissues. In this way I was able to approximate the mucous membrane of the pharynx and the œsophagus, so that on the posterior wall only about an inch remained between them. I then closed the skin over the space, and attached the œsophagus to the skin with a couple of stitches. My hope is that in this space between the skin and the prevertebral tissues cicatrized tissue will ultimately be covered by epithelium growing upwards and downwards from the œsophagus and the pharynx.

The patient so far is doing as well as possible. She is being fed regularly by a tube inserted into the end of the œsophagus in the neck.

C. B. KEENAN, M.D.—With regard to the brain tumor, I may say that on examination I found it to be composed of tubercular tissue. The mass was made up of necrotic material, a little different from the tubercular mass, but in most parts very many tubercle bacilli could be demonstrated, at least so far as one could judge from their staining reactions and morphology.

D. A. SHIRRES, M.D.—I would like to ask whether there was any increased blood pressure in this tumor case, and if there were any symptoms anywhere else of tuberculosis? Tuberculosis is very rare indeed in the nervous system, primarily, and a single tubercular tumor of this nature is indeed a rarity. From the history of the symptoms alone in this case there were sufficient signs to locate the growth, and Dr. Bell is to be congratulated on the success of his operation so far.

G. E. ARMSTRONG, M.D.—This operation on the larynx and œsophagus is one of great interest and some rarity; it is a very severe operation, and not, as a rule, commended by English-speaking surgeons, though the Germans have had very considerable success. Prof. Gluck has been most successful. I recently had a case under my care, which, however, was not so fortunate as the one just reported, having died on the 15th day after operation. The woman had complained of dysphagia for more than two years, and for three months before coming to me had been unable to swallow any solid food at all. At the time she entered the hospital, even fluids could not be passed. The whole passage seemed to be almost completely occluded. Specimens taken from the larynx

and also from the end of the œsophagus by Dr. Birkett were pronounced to be epitheliomatous. It was after some considerable hesitation that I undertook the operation. After consultation with Dr. Birkett, and having read Prof. Gluck's paper, I determined to remove the disease as far as possible. On April 3rd, I did a gastrostomy, a Witzel gastrostomy, which was not, however, altogether satisfactory, though Mikulicz strongly recommends it; indeed, I attribute the failure of recovery very largely to the condition which later developed in the tissue around the opening in the stomach. I removed half the larynx in this case, which seemed to be all that was required, and a little less than half the epiglottis, and then I removed the lower part of the pharynx and a considerable portion of the œsophagus. The mucous membrane was so extensively involved that it was not wise to leave any portion of it. I depended for feeding entirely upon the gastrostomy opening. The operation itself was not difficult; the woman recovered, without any shock; there was no trouble with the breathing and no trouble with the chest. She died from inanition from the failure of the gastrostomy wound to retain food properly. I think had I done the Frank operation she probably would have recovered. These are terrible operations, but I think from what Prof. Gluck has done that, with a little more experience, and a little more technique, we can save these cases for a very considerable time . Prof. Gluck has shown eight of these cases, and I think there is a future for such operations.

H. S. Birkett, M.D.—These two cases, in my mind, serve to emphasize the fact that one should always carefully investigate the question of dysphagia in any individual. In both of these cases the symptoms had been lightly treated and regarded more as neurotic than due to actual organic disease. If they had been investigated, especially by means of the œsophageal sound, the local conditions would have been discovered earlier. These cases begin very often just below that portion of the œsophagus which is not visible by the laryngoscope by the ordinary method of examination, and is very often necessary, in order to get a glance at the condition lower down, to make the patient retch. Another result these cases show, especially as regards the larynx, is the interference with the mobility of the vocal cords. In Dr. Armstrong's case we found definite immobility of one cord, while in the case of Dr. Bell, with a more extensive condition, it was extraordinary to find that the cords were absolutely perfect in their movements. I would emphasize again the fact which these two cases bring out very strongly, namely, that cases of dysphagia should always be investigated with a proper bougie, as they are not always neurotic in nature.

F. R. England, M.D.—I would like to ask Dr. Bell if, in the brain

case, there was any polyuria? I have seen one case of cerebral tumor where that was a very marked symptom. I think the case of intussusception, which recovered, was certainly a very fortunate termination after six days and with gangrene.

James Bell, M.D.—Regarding the brain tumor, I would say that there was some increase of blood pressure. There was no evidence of tuberculosis anywhere else in the patient nor any hereditary history. There was no polyuria. With regard to the larynx case, the fact is that no individual surgeon acquires, until after a great many years at least, a sufficiently large experience to generalize from these operations. Of course, a good many of my colleagues, who have seen this patient, or heard of the case, have ventured the opinion that it would have been better to have cut her throat. But that does not concern us surgically. The question which here comes before us, is what can you do with a patient with cancer in this situation? Here the main problem was, after the removal of the disease, the establishment of the communication between the mouth and the œsophagus. It is well known that even very large areas, which have been deprived of skin, become covered over with epithelium, and in line with this experience why should not even comparatively large areas become covered with mucous membrane, and it seems possible here that something of this nature may occur. With regard to the operation itself, I have come to think that the less one does of preliminary operations the better. Either preliminary tracheotomy, or preliminary gastrostomy, I think, are mistakes in all probability. Of course, I speak with all due deference, because I have not had sufficient experience to be anything like dogmatic on this point; but in the general experiences of life I think it is usually a mistake to compromise, and when we come to deal with cancer we only deal with it surgically while we still believe that it is a localized disease, and any attempts to compromise to save deformity or mutilation are mistakes. In spite of the experience of such men as Sir Felix Semon and others, I believe we ought to face these cancerous conditions in the same spirit as we do elsewhere, with the same regard to the simple and complete removal of the localized diseased condition. My belief is strengthened by the fact that I think that experience shows that the larger general operations are safer operations in their immediate results than any partial operations. Of course, this patient has only been operated on one week and it is too soon yet to draw conclusions. I have had patients die of septic pneumonia after longer periods than this, and while I think her condition indicates recovery, and the probabilities are that she will recover, it is too soon to count on this. What we have yet to consider is, will she recover so that food, saliva, mucus, and fluids

taken by the mouth will pass through, naturally, to the stomach, or will she have to pass the rest of her life with a fistula and be fed through the opening in the neck?

Dr. G. P. Girdwood:—The case which I have the honour of presenting to you this evening is that of a young woman who came under my care two years ago. She had been suffering for the previous 28 years with these extensive areas of disease, as shown in photographs presented, which will enable you to compare her previous condition with the results of our treatment, as shown in her present condition. The case was determined as one of hypertrophic tubercular lupus, one large patch extended from the inner cauthus of the right eye along the lower eyelid and past the temporal region extending around the right ear, the whole of which was involved, passing down the neck under the jaw up the left side, involving the left ear, down again under the jaw and up the face to the angle of the mouth on the right side along the side of the nose to the starting point. The area included in such a line was all involved in the disease, the thickening above the surface of adjoining skin amounting to nearly three-quarters of an inch; a round spot of the same elevation and one inch in diameter occupied the upper lip just below left nostril, and a large area about four inches by five extending from upper part of forehead into the scalp. She had also one patch in the bend of the right elbow, another just above internal condyle of humerus, on right arm, another on the back of the same arm a little above the elbow, and one more a little higher up on the inside of arm—and two others, each about one inch in diameter and circular, on the chest—the larger area around the face and ears was treated with X-Rays only; the spots on her arm were treated one with X-Rays, one with high frequency current, applied with a Geissler tube, and two others with Finsen light. The application without any internal remedies were applied continuously for some time, when a dermatitis ensued, which necessitated stopping the treatment for a time; when the dermatitis had subsided a very considerable improvement in all the spots treated was seen and treatment was again continued, with the result of taking off the hair over the temples, and producing a further dermatitis, which again healed leaving a still more marked improvement. She was now unable to attend again for some months, indeed, for the last nine months she has not been able to attend, but now she has returned again, and I hope to complete her cure. I have brought her here to show you to-night what we have been able to do so far, and because it is so very extensive a case, and of such long duration, and I hope to be able to show her to you again when the last patch has disappeared.

In this case I have not used any internal agents. This was proposed

some year or more ago, and I tried quinine but so far have not satisfactorily come to the conclusion that I gained any benefit by it. It may be that one does get some benefit, but I have not been able to satisfy myself on this point. In our treatment the question is after all, I believe one of vibration. We know that every atom has its own peculiar vibrations, and when two or more atoms are combined together, then we have a molecule which has its own peculiar vibrations and movements, a mean between the atomic vibrations, and now comes the questions whether these agencies may not start vibrations in the body in rhythm with the healthy molecular vibrations, just as goes on in normal health, or the stimulation of either the tubercle or other bacilli in this instance, or some of the products of their development so as to bring about health.

Dr. Robert Wilson read a preliminary paper upon the use of the less active radio-active substances in medicine and gave a demonstration of apparatus.

G. P. Girdwood, M.D.: Dr. Wilson is to be congratulated on the ingenuity of his apparatus. All these questions are problems which seem to me to be a little unworked out yet, and I confess that I have not had time to go into them at all. It is being done by other workers in the field, and Prof. Rutherford is one of them. We know that those rays, whatever they may be, coming from the X-Ray tube, are capable of producing certain effects and we find with a low tube we have certain effects, with a high tube others. In the low tubes we also get heat rays which with the higher vacuum tube do not seem to give the same effects. And here it is that we have the vibratory rays which are stopped by fluorescent substances and the rapidity of vibrations reduced. I am inclined to think that the general effects of these X-Rays are due more to mechanical vibration than to anything else. But this requires the test of time to prove.

The following figures show the prevalence of quackery in the German Empire. In Prussia the number of persons who practise medicine without a legal qualification is 4,104, being in the proportion of 22.8 quacks to every hundred legitimate practitioner. From 1897 to 1902 while the population of Berlin increased by 30 per cent., the number of quacks increased by 57 per cent. There are in Germany 835 "nature healing" associations with a total membership of 111,887. In the course of three years 392,000 pamphlets setting forth the excellence of that system of quackery were distributed, and in 1902, 3,056 public addresses in praise of it were delivered. One of the journals devoted to the propagation of nature healing has a circulation of 112,000 copies.

The best informed members of the medical profession are watching in a conservative state of mind the efforts in progress in various parts of the world to ascertain with some approach to precision the effects of the Röntgen ray and certain other rays upon malignant growths. But the newspapers are not hampered with any such conservatism; even now they are proclaiming as an accomplished fact the cure of a distinguished man whose case had recently been submitted to ray treatment. We should all feel glad if what they are so ready to take for granted were really confirmed, but we cannot for the present avoid the reflection that false hopes are probably being raised in the hearts of many credulous persons. When a cure for cancer is discovered, it will certainly be announced, but false announcement can do nothing but harm.—*N.Y. Med. Jour and Phila. Med. Journal.*

An answer to the following is invited by the *Practitioner*:—A male, aged 50, labourer, was admitted to hospital. The following history was obtained. His previous history was good, and there was no evidence of syphilis. One year ago he complained of frontal headache, then he had severe pain in the right temporal region, and his right upper lip dropped. In two months he discovered the right side of his face was numbed, his headaches were worse. Later he suddenly lost consciousness, and fell and injured his head. When he recovered it was discovered that he was blind in the right eye, and he gradually became blind in the left eye. On admission he was thin and sallow, his memory was bad, his right upper lip was completely dropped, and the right eyeball looked straight, and could not be moved. The left upper lip was weak, movements of the left eyeball were normal, except the eye could not be moved outwards. The pupils were unequal, the right being larger. Both optic discs showed consecutive atrophy. Sense of smell was absent on the right side, the right conjunctiva was insensitive and injected, on the right side of the face sensation was impaired, mastication was difficult, hearing was defective on both sides. The patient could swallow, all four limbs seemed fairly strong. Knee-jerks were normal. No morbid condition was detected in the chest or abdomen. The urine was normal. Later it was noted that the uvula was deflected to the left, and the right half of the soft palate was paralysed, the teeth became tightly clenched, the elbow and knee-joints flexed and rigid, the legs adducted, and the knee-jerks increased. The patient became semi-comatose, respirations were 42 and noisy. The temperature rose to 102, mucous râles were heard over the chest, the pulse became weak, coma deepened, and the patient died. What morbid condition was found on post-mortem examination which produced those symptoms?

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXXIV. SEPTEMBER, 1905. No. 9.

CHORIONEPITHELIOMA.

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The French tell us "souvent femme varie, fol qui s'y fie." This certainly may be said with truth about the theories which we hear laid down in no faltering manner with regard to causes of disease. These are constantly changing and what we hold as absolutely proven to-day, to-morrow we find is quite wrong. Most of us in our student days were taught that the impregnated ovum rested upon the mucous membrane of the uterus, and that this membrane grew around the ovum and held it in position. Not only did the ovum become fixed in this way, but the maternal tissues grew up around the fœtal villi, and so formed the placenta. We now know this to be false, and that the placenta is formed by the trophoblastic cells of the embryo penetrating into the maternal tissues, and so preparing the way for the villi to follow. These trophoblastic cells may be found lying not only in the mucous membrane of the uterus, but also in the muscular wall of that organ. These cells, the syncytium and Langhans' cells, are to be found in all uteri between the first and tenth week of pregnancy, and may even be discovered in puerperal uteri. They may disappear, and usually do so, but at times they persist, and form a new growth, the "Deciduoma Malignum" of Sänger or, as it is now universally called, "Chorionepithelioma."

Chorionepithelioma[1] is an extremely malignant growth arising in connection either with pregnancy or teratomata, and characterized clinically, by its appearance during the puerperal state, by its very rapid growth, by intractable hæmorrhages and by visceral metastases which are propagated by the blood-vessels; and, histologically, by peculiar

[1] Read at meeting of Canadian Medical Association, Halifax, N.S., August 22-25, 1905.

cellular elements which differ in themselves from those of any other tumour formation.

The disease has only been recognized during the last twelve or fourteen years, cases before that time being diagnosed as carcinoma of the uterus. The earliest case is one reported by Wilton, in 1840, the disease occurring in a woman 37 years of age, who had been pregnant six times, the last pregnancy having terminated in hydatid degeneration. The patent died from rupture of the uterus and intraperitoneal hæmorrhage. Between 1840 and 1888 several undoubted cases were reported by Netzl,[1] Hoffmeier and others; but it was not until July 16th, 1888, that the disease was described as a separate entity by Sänger[2] in a paper read before the Gynæcological Society of Leipsic, so that our knowledge of the malady may be said to date from that time. He considered it to be a sarcoma arising from the decidual membranes, hence the name "Deciduoma Malignum," which he gave to it. Many other theories as to its nature have been put forward. Pfeiffer,[3] Löhlein, Nové-Josserand and Zweifel consider it to be a decidual sarcoma, while Toupit and Hartmann hold that it is of fœtal origin. Gottschalk looked upon it as a tumour of the chorionic villosities, and pointed to the frequency with which it followed hydatid mole. In 1895, Marchand[4] stated that it was not a sarcoma, but that it sprang from the epithelium of the syncytium and Langhans' layer, that is to say, that it originated in the lining of the villi, thus consigning to the disease a double origin, viz., fœtal, from its origin in Langhans' layer and maternal from the syncytium. This view of a mixed origin was supported by Resinelli, Bandler, Fränkel and Langhans, but, later, in 1898, Marchand[5] modified his view by stating that the syncytium arose from the fœtal ectoderm. To-day, the origin of chorionepithelioma from maternal tissue is denied by all observers, and the majority maintain the view of Apfelstedt[6] and Aschoff, etc., that the disease springs from the syncytium and Langhans' layer, but that both of these have their origin in fœtal elements.

To summarise, there are two principal views as to the origin of chorionepithelioma. One, and the oldest, is that of Sänger, Chiari, and others, that the disease is sarcomatous, while the second, supplied by Marchand and his followers, is that it is a special form of epithelioma of fœtal origin.

Although, in the vast majority of cases, chorionepithelioma follows pregnancy; it does not always do so, instances having been recorded by competent observers where the disease occurred in old women past the menopause, in undoubted virgins, and even in males; but in all such

cases the presence of teratomata was either proven or strongly suspected. The fact has been emphasised by Schlagenhaufer [7] and Wlassow.[8] As examples of this may be cited the cases of Bostrom and Ritchie. Bostrom's [9] patient was a man, 32 years old, who was operated on for a small cerebral tumour, which, on histological examination, showed decidual masses. Later on, the man died and the autopsy revealed metastases in the lungs and peritoneum, these metastases also showing evidences of chorionepithelioma. Ritchie's patent was also a young man, who died of a malignant tumour of the mediastinum. At the autopsy, a dermoid cyst was found, as well as another mass, which showed all of the microscopical characters of chorionepithelioma. These exceptions are sufficient to establish the fact that the disease *may* occur quite independently of pregnancy, but there is no denying the statement that but few cases are seen in which there has not been some evidence of previous impregnation.

Pathological Anatomy.—Examination in situ with the naked eye shows the growth to be an irregular, diffuse, fungous mass deeply implanted in the uterine wall by numerous prolongations which run between the bundles of muscular fibres. At other times, the surface is ulcerated, rough and coarsely ragged with villous vegetations. At the seat of the disease, the uterine wall may be almost or entirely eaten through. Solivij [10] reports a case where the disease had penetrated into the parametrium. More rarely, the growth may be pedunculated or else the opposite condition may be present, nodules of tumour lying beneath the mucous membrane, which is apparently intact. The tumour varies considerably in size; it may be as small as a marble and almost never exceeds the size of a full term fœtal head. In colour, it is usually greyish, with dark hæmorrhagic spots, but it may be either dark green or bright red. The growth is usually soft and friable in consistance, never being firm, as in fibroids, or hard, as one gets in ordinary epithelioma. The usual situation of the tumour is high up near the fundus uteri, but the vagina may be the primary site, and examples of this have been reported by Landau and Büsse. Landau's [11] patient was an unmarried girl, twenty years of age, who previously had enjoyed the best of health. She was admitted to his clinic on November 9th, 1900, having been last "unwell" in the middle of August. At the end of October, bleeding and pain in the lower abdomen came on. She was examined on November 5th, and the os was found to be closed. She was curetted but no diseased tissue was found. She suffered from repeated hæmoptysis. On November 9th, Landau found the internal organs of generation to be healthy, but he discovered two swellings

situated in the lower part of the left wall of the vagina near the introitus. One of these was the size of a bean, while the other was about twice as large. They looked like trombosed veins, and the mucosa over them was ulcerated with blood at the base of the ulcer. No physical signs of pulmonary disease could be made out. The two vaginal masses were excised, and the patient was apparently quite well in February, 1902. Microscopic examination of these masses and uterine scrapings showed that the former were typical examples of chorionepithelioma, while the uterus was quite free from disease. Contrary to most uterine growths, secondary deposits occur both early and frequently in chorionepithelioma, and this fact may be considered as symptomatic of the disease. Extension takes place by means of the blood-vessels, and in many specimens one can see the tumour cells projecting into the blood-spaces or even lying loose there. A case reported by Lockyer, however, suggests the possibility of their transmissibility by the lymphatics as well. The patient was 26 years old, and had given birth to a full time child four weeks before coming under observation. Ten days after labour, she began to have dragging pains in the vagina, accompanied by a brownish discharge. About ten days later a lump appeared in the groin. The primary seat of disease was the uterus, with secondary noduls in the left groin, right labium majus and lungs. This inguinal swelling occupied the site of the inguinal glands and greatly resembled a mass of enlarged and inflamed glands. Although microscopic examination of these masses did not reveal any glandular structure, their appearance and situation, at least, are suggestive of invasion through the lymphatics. The lungs are the organs which are the more prone to be affected secondarily, thus accounting for the cough, dyspnœa, hæmoptysis, etc., so often met with. Next in order of frequency to be attacked by secondary deposits is the vagina. Here, the growth usually presents itself as a soft violet coloured nodule, which rapidly increases in volume, ulcerates, and bleeds profusely. Eirmann's statistics show 28 pulmonary to 20 vaginal metastases, while in my own series of 277 cases (including Teacher's) there are 103 pulmonary and 72 vaginal growths. The nervous system may possibly be affected, and, more rarely, the bones. As for the viscera, there are none but what have been attacked.

Histology.—Teacher [12] describes the most typical elements as consisting of (1) Small well-defined polyhedral cells with large vesicular nucleii closely packed together in masses without any connective tissue stroma between them. (2) Large multi-nucleated masses of protoplasm (plasmodia or syncytia) in which no definite cell boundaries are recognisable. (3) Large cells, sometimes mono-nucleated, sometimes

multi-nucleated, some of which present a resemblance to decidual cells, while others are identical in character with the multi-nucleated giant cells which occur in the decidua serotina. These, in some parts, are arranged in cell masses without intervening cell stroma, while in other places they are infiltrating and destroying adjacent tissues after the manner of sarcomata. The cells of the first class are those of Langhans' layer. When young, they are small, but they increase in size as age advances. Their nucleii contain a fine intra-nuclear net-work and are easily stained. They also contain glycogen. These cells of langhans' layer constitute neither an important nor a necessary element in chorionepithelioma, and they may be completely absent in specimens from undoubted cases of that disease. The same statement does not hold good, however, in regard to the syncytial masses, which are always present in true chorinepithelioma. The plasmodia or syncytia are not true cells, but are simply ill-defined masses of protoplasm with one or more nucleii. Their protoplasm is usually homogeneous and opaque and takes the stain of eosin, etc., very strongly. The nucleii are small, oval or rounded, and are scattered throughout the mass without any attempt at order. They multiply by direct division, and may be vacuolated. The syncytium forms the boundary of the growth, *i.e.,* it is seen at its periphery. In the centre of the neoplasm, no vessels with true walls are seen, but the growth is nourished by means of lacunæ, the walls of which are composed of syncytial masses which penetrate the uterine wall. In doing so, they send long processes between the muscular bundles which run along the vessels and ultimately penetrate their walls. Before actually doing so, however, they cause a weakening of the walls, thus allowing of a localised dilatation of the vessel which gives it an appearance of being thrombosed, or varicose. After entering the vessel, these plasmodia actively proliferate and act in one of two ways. The mass in the vessel may form a thrombus, which may itself go to some distant part or it may give off cells or smaller portions which, in their turn, travel with the blood-stream and so give rise to new foci of disease. Or, the thrombus may form and remain where it is, becoming canaliculised and taking the place of the vessel wall. This infiltration of the vessel wall explains the manner of spread of the disease and also the hæmorrhages. Haultain [13] thinks that many cases of cure may be explained by the blood being poured out around the neoplasm and cutting off its nourishment by pressure.

Marchand recognises three forms, viz.: (1) Typical, characterised by the presence of syncytial masses sending off branches in all directions, thus forming a net-work, the strands of which are covered with nucleii, and in whose meshes are clear cells which vary in number; (2) Inter-

mediary form, where the characteristics of the above two are blended. Nothing is known, so far, as to the relation between these different forms and the prognosis.

Clinical Process.—Chorionepithelioma may begin very insidiously by bringing out symptoms of some very different malady, as is seen in the case reported by Büsse.[14] In this case, the patient had a fatal hemiplegia, and the autopsy revealed the presence of chorionepithelioma affecting the right Sylvian artery, with secondary deposits in the liver, spleen and right heart, the genitals being quite free from the disease, although the patient had suffered from a miscarriage six months previously. Usually, however, it is uterine hæmorrhage which first attracts the attention of the patient. This bleeding is marked by its severity and its resistance to treatment, curettage even being ineffectual in many instances. This blood-loss rapidly impairs the patient's health; she loses weight and her skin becomes waxy. Between the hæmorrhages there is a serous, sero-sanguineous or smoky discharge, which has a foul odour. Local pain is either absent or slight. The patient may have chills, fever, vomiting, cough, purulent expectoration, hæmoptysis, nervous affections, etc., produced by the metastases, or, in the case of the chills and fever, sepsis.

Examination of the patient reveals various phenomena. Bi-manually, the uterus is felt to be enlarged, but the amount of this enlargement varies, rarely, however, exceeding that of a full term fœtal head. Its surface may be either nodular or else smooth and even. Per vaginam, the cervix may be felt to be soft and the os to be so patulous as to admit of the entrance of the examining finger into the uterine cavity, where one may find a mass of soft, spongy material, resembling placental tissue. This growth is usually situated on either the anterior or posterior wall of the uterus near the fundus. While exploring the cavity, the finger may remove a fragment of tissue for microscopical examination Pigmentation of the skin, which is so often seen to accompany the usual forms of malignant disease, so far has not been recorded in connection with chorionepithelioma.

Etiology.—This disease usually occurs during the period of greatest sexual activity, but there are exceptions to this rule. One case in a patient over fifty-five has been reported, but none beyond that age. It may occur in girls before they reach puberty, but this is extremely rare. Teacher considers the average age to be about thirty-three, with a slight rise towards the two extremes of sexual life, owing to the tendency of old or immature uteri to produce abnormal conceptions, especially hydatid mole. "Out of 169 tumours, 6 occurred between the ages of

17 and 20; 73 between 21 and 30; 54 between 31 and 40; 28 between 41 and 50; 9 between 51 and 55; and 22 in women over 45."

In a series of 277 cases collected by myself, including Teacher's list, age was not stated in 19. Of the others, 4 were under 20; 105 were between 20 and 30; 80 were between 31 and 40; 57 were between 41 and 50; and 12 were over 50.

There can no longer be any doubt as to the influence which hydatid moles have upon the chorionepithelioma, and this is probably due to the extreme activity of the epithelium of the chorionic villi. Of 12 cases which occurred in women who were over fifty, 9 followed moles, with the exception of McCann's patient, who had not been pregnant for nine years.

Eirmann reports that, out of 35 cases, 18 were preceded by hydatid moles. Ladinski [15] collected 128 cases, of which 51 followed moles (expelled at the fourth month in 33 cases); 41 followed abortions; 21 followed normal labour; 4 followed premature labour; and 3 followed tubal pregnancy.

Metoz collected 98 cases, of which moles preceded 48.

In my own series, the nature of the previous pregnancy was only stated in 262 cases. Of these, 36.78 per cent. followed moles; 31.80 per cent. abortions; and 26.43 per cent. full time labours. Gebhardt states that hydatid mole develops once out of every 728 pregnancies, while Williamson gives the relative frequency to be 1 mole in every 2,400 pregnancies, and Berry Hart finds that 1 mole in every 1,000 becomes malignant.

The duration of time between the pregnancy and the appearance of the disease varies. Usually only two or three months intervene, but McCann reports a case with nine years' interval, Flieschman six years, and several with an interval of from two to three years have been recorded. My own case was delivered of her last ovum (an hydatid) three and a half years before the inset of symptoms. It may, however, develop during the course of pregnancy.

Another factor which may wield an important influence upon the etiology of this disease, is disease of the ovaries. In quite a large proportion of the cases of chorionepithelioma such a complication has been noticed. When it does occur, it is usually in the form of lutein cysts, the abnormal quantity of lutein cells which is present being supposed to have a stimulating effect upon the proliferating epithelium of the villi. While the connection between these lutein cysts and chorionepithelioma has not yet been proven, the two conditions are sufficiently often observed in the same patient to give some strength to the theory. As evidence of this, Hammarschlag rports five cases of chorionepithelioma,

in all of which lutein cysts were present. Even where the ovary appears to the naked eye to be healthy, careful microscopic study will often show an excess of lutein cells to be present.

Prognosis.—Chorionepithelioma is considered the most malignant tumour which can attack the uterus. If not interfered with, death usually supervenes in from a few weeks to two or three months, but, exceptionally, the patient may live for one or two years (Bacon). If discovered early and treated radically, the patient may recover, and the same happy result has been reported even when no treatment was carried out; but the diagnosis in these cases is doubtful. However, well authenticated cases have terminated favourably where part of the growth had been left in situ. In one of the cases reported by C. P. Noble, the disease had spread from the uterus to the bladder, and, although this infected area was left, the patient fully recovered. She was seen and examined 18 months after her operation, at which time the nodule could not be felt, and she was in excellent health.

Velits considers that spontaneous cure may result from necrobiosis, "as is shown by the lowered vitality and the disappearance of the cells of Langhans, and the appearance of wandering cells, which shows the separation of the syncytium." Cases somewhat similar to that of Noble, where the secondary nodules have not been touched, but hysterectomy has been performed and the patients have made permanent recoveries, have been reported by Albert, Kolomonkin, Marchand, and others.

Those cases which follow moles are less virulent than those which are preceded by ordinary pregnancy, and, of the latter, those ending in abortion appear to have the highest rate of mortality. In my own series, the mortality was: After moles, 52.85 per cent.; abortions, 63.75 per cent.; and after full term pregnancies, 54.32 per cent.

Nothwithstanding the above-mentioned exceptions, the prognosis in chorionepithelioma is extremely grave.

Diagnosis.—Hæmorrhage after labour does not always mean chorionepithelioma, but in all cases where it is severe, continuous and difficult to check, one ought to be suspicious of serious trouble. In such a case, curettage with subsequent microscopical examination of the scrapings should clear up the diagnosis, but the tissue must be examined in as perfect a condition as possible if any valuable information is to be obtained.

It is very difficult to distinguish between the villi of an hydatid mole and those of chorionepithelioma, but where you see large degenerated cells you must be on the watch for malignancy. Where you have severe and obstinate hæmorrhage in a puerperal woman, and find evidences of

any abnormal growth in the vagina or a soft, villous mass in the uterus, you may rest assured that you have to deal with a case of chorionepithelioma, and the examination under the microscope of a small fragment will decide the diagnosis. Be especially watchful for masses in the vagina or vulva resembling varicose veins, as this disease frequently causes a species of false varicosity due to its attack upon, and consequent local dilatation of, the walls of the vein.

Treatment.—The treatment may be preventive, palliative or curative. The former consists of careful attention to the interior of the uterus after pregnancy, especially if this has terminated in abortion. Before we know how serious a condition may follow an apparently normal expulsion of an ovum, it was considered good treatment to leave an ovum the subject of a "missed abortion" in the uterus for some time in order to see if it would not eventually come away spontaneously. The same view was held by many in regard to a retained fragment of membrane or placenta. In view of our present knowledge, however, I think that this line of treatment will be abandoned for a much more energetic and radical method, and that these foreign and potentially dangerous bodies will be removed with great care and thoroughness as soon as discovered, in order to prevent placental grafting with its possible serious results.

The palliative treatment is only to be adopted in cases where the growth cannot be removed. Tonics are indicated by the debility of the patient. The uterus should be curetted, douched with an antiseptic solution and packed, and caustics or styptics may be applied to its cavity with benefit at times. All of the diseased tissue possible should be removed and the parts kept thoroughly cleansed. Pain and complications are to be combated as may be indicated.

Where there is any chance of curing the patient, early and radical operative measures are absolutely necessary. If the primary growth is in the vagina or labia, complete excision should be attempted. Where the uterus is affected, total hysterectomy is indicated. This may be carried out by either the vaginal or abdominal routes, the former being the favourite on account of the danger of infection of the peritoneum by the tumour cells. Where, however, the uterus is too large to be removed intact through the vagina, the abdominal is the method to be preferred. In such a case, it is well to thoroughly curette and douch out the uterus first (that is to say, if that organ is not too deeply diseased) and only to open the abdomen after the cervix has been closed by suture.

My own case, for which I have to thank Dr. F. C. Mason, of Massena, N.Y., is as follows:—

The patient was a married woman, forty-seven years of age, and was admitted to the hospital on December 1st, 1904, with the following history: Four years ago, she was delivered of a uterine hydatid. In June last, she began to fail in health, losing strength and weight. At the same time, she began to have a discharge, which was bloody and without odour, from the vagina. This has kept up, on and off, ever since, and within the last two weeks she has failed rapidly. The discharge has had a disagreeable smell for the last few days. Puberty occurred when she was 16 years old; she was regular every 28 days, and the flow lasted for five days. It was moderate in amount and painless. Menstruation has been irregular for the last year, the intervals being longer than before. She has been flooding for the last five months almost continually. She was delivered of one full term child nine years ago, the labour being instrumental. Her only other pregnancy terminated in an hydatid mole four years ago, or about three and a half years before the first onset of symptoms of the present trouble.

She has never been troubled with leucorrhœa.

She has no interference or disturbance with the act of micturition except that the water flows more slowly now than formerly, as if the urethra was becoming smaller. Her bowels are constipated.

Examination of the genitals reveals a thin red, bloody discharge.

A greyish, ovoid swelling is seen to be attached to the anterior vaginal wall by a narrow pedicle, which extends from near the external urinary meatus to just below the cervix, leaving a small space of apparently healthy tissue between the two. This growth is the size of an ordinary hen's egg and slightly mobile. The cervix is soft, healthy and mobile. The fundus was slightly enlarged, hard, rounded, and mobility was present but limited in extent. To the left side of the uterus could be felt a mass the size of a hen's egg. A diagnosis of probable chorionepithelioma was made and the removal of the growth advised.

This latter was attempted on December 3rd, 1904, but on examination under ether the growth was found to extend to the mass at the left of the uterus. However, it was decided to remove as much as possible of the diseased tissue. The superficial mass was excised without difficulty, and as much as possible of the mass to the side was scraped away, in doing which the submucous tissue of the bladder was exposed. The cavity thus formed was closed by a continuous catgut suture in layers from below upwards. The cervix was then dilated and its cavity curetted, douched and packed with gauze. The curette brought away a considerable amount of tissue which strongly resembled carcinoma.

The patient made a good recovery from the operation and improved in health and strength after going home; but towards the end of

January she began to fail and rapidly go down hill, dying on April 2nd.

Dr. Mason informed me that, soon after her return home, a mass, the size of the first joint of the thumb, appeared in the right labium majus. On January 29th, two growths in the vagina were first noticed. One, situated over the lower end of the vaginal cicatrix, was as large as an egg at the time of her death. The second, about the same size, was placed to the right of the incision, but high up in the vagina, the two nearly filling the passage. On February 7th, a foul discharge began to flow from the uterine cavity and increased in amount up to the time of her death. This discharge was thin and bloody, but was quite free from clots or other particles. On February 14th, this labial growth broke down, discharging into the vagina and decreasing in size until it was only about half as large as it was originally. The uterus grew to be large enough to almost reach the umbilicus to the left of the median line. It was more or less smooth, firm and hard. To the right, was a nodule which was also smooth, firm and non-sensitive, while between this mass and the uterus was an elongated mass like "a small wrist," which was more soft, smooth, somewhat tender, and, at times, painful. In fact, most of the pain from which the patient suffered was in this region. Towards the end, the patient had a great deal of dyspnœa and cardiac palpitation, cachexia, malnutrition, and general constitutional disorder. There was no disturbance of micturition. Unfortunately, an autopsy was refused .

I have omitted the fact of there not having been any rise of temperature from first to last, except immediately after operation, when it hovered between 99 and 100 for the first three days.

The following pathological report was made by Dr. Gillies, of the Montreal General Hospital, to whom I am much indebted for the care and interest taken in its preparation:

Pathological Report.—The specimen submitted consisted of the tumour from the vagina and scrapings from the uterus. Of the latter, numerous pieces were hardened in alcohol and imbedded in parafine and many sections were examined, but nothing abnormal was found in any.

The tumour from the vagina consisted of five pieces of tissue, all presenting the same characteristics in appearance, but varying in size. The largest was about 2 cm. square, and the smallest about the size of a bean. A description of the largest will apply to all. The under surface consists of the vaginal wall, while the upper one presents a shaggy appearance of a dirty brownish colour, resembling clotted blood. On cutting into the tumour, it can be seen to spring from the muscular wall of the vagina and to be intimately connected with it. It measures

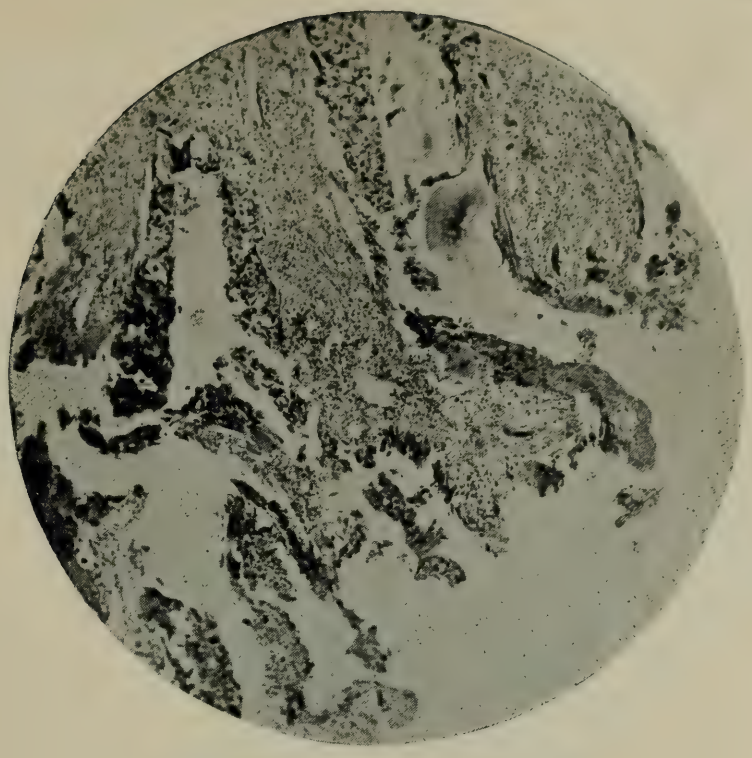
between .5 cm. and 1 cm. in thickness and is adherent to the vaginal wall throughout its entire extent. The upper surface is friable and pieces, resembling blood-clot, are readily broken from it. Near the vaginal surface, the tissues are firmer and more resistant. Pieces were taken from each tumour mass for microscopic examination. They were hardened in alcohol and formalline and embedded in parafine. The stains used were hæmatoxylin and eosin, hæmatoxylin and van Geisen and weak alcoholic fuchsin.

The sections from the different pieces show practically the same picture.

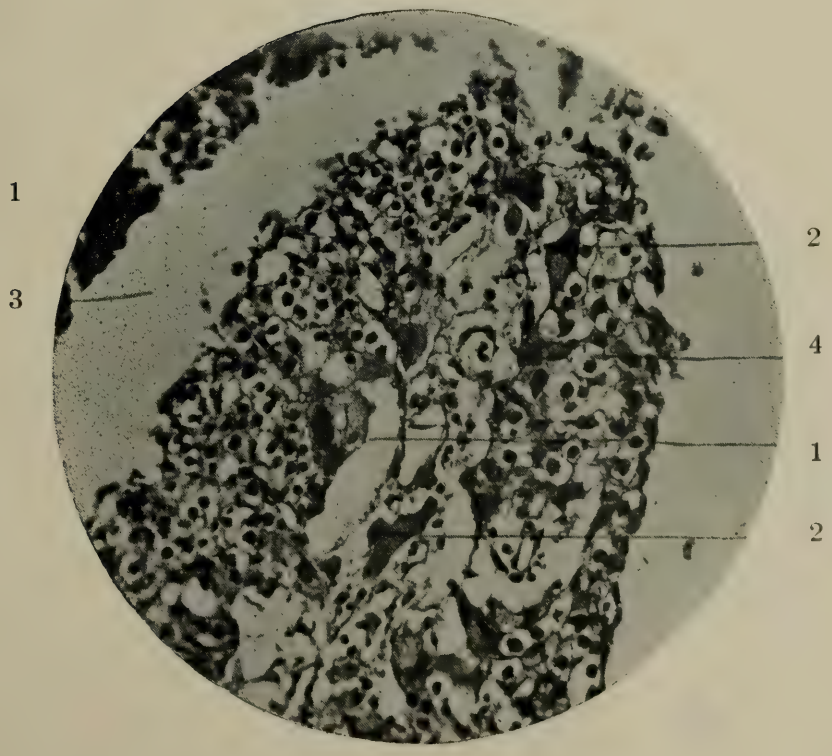
Springing from the muscular layer of the wall of the vagina are seen coarse villous prolongations, burrowing into a degenerated and necrosed loose tissue. In parts, this necrotic tissue shows a large quantity of fibrin, and in other parts cells, resembling those seen in the villi, can be observed irregularly scattered through it. The deeper surface of the tumour shows clotted blood, which can be readily recognized here as well as in other parts of the masses.

The cells of the villi are of several kinds, which greatly vary in their morphology. The main mass of these processes is made up of large mononculear spheroidal cells with a clear protoplasm, and resembling epithelial cells in their appearance and arrangement. In certain of these cells the nucleii are vacuolated. Other cells, and these are especially striking in their appearance, consist of irregular large masses of protoplasm, which stain deeply and show a granular or reticulated structure. The shape of these protoplasmic masses varies, being at times flat and elongated or rounded or else branched at one end. They also differ in size. Lying within these masses are seen nucleii, which are either oval or rounded, and which vary in number from three or four up to twenty or more. The relation of these characteristic masses to the clear cells, spoken of above, is not always the same. At times, the former lie as narrow nucleated masses outside of or bordering on the clear cells, while in other places no clear cells are to be seen, and yet the plasmodia are abundant. One other form of cell deserves mention. It is rather large, stains deeply, and contains a large round single nucleus. These latter cells are scattered through the tumour mass, especially with the syncytial masses, but also in the necrosed portion. Numerous polymorphonuclear cells are present, and, at the edge of the growth, where it can be seen pushing up from beneath the vaginal epithelium and causing its destruction, are numerous small round cells.

With regard to the supporting tissue of the tumour, it is scanty in amount, and of a very loose structure arranged about and lying between

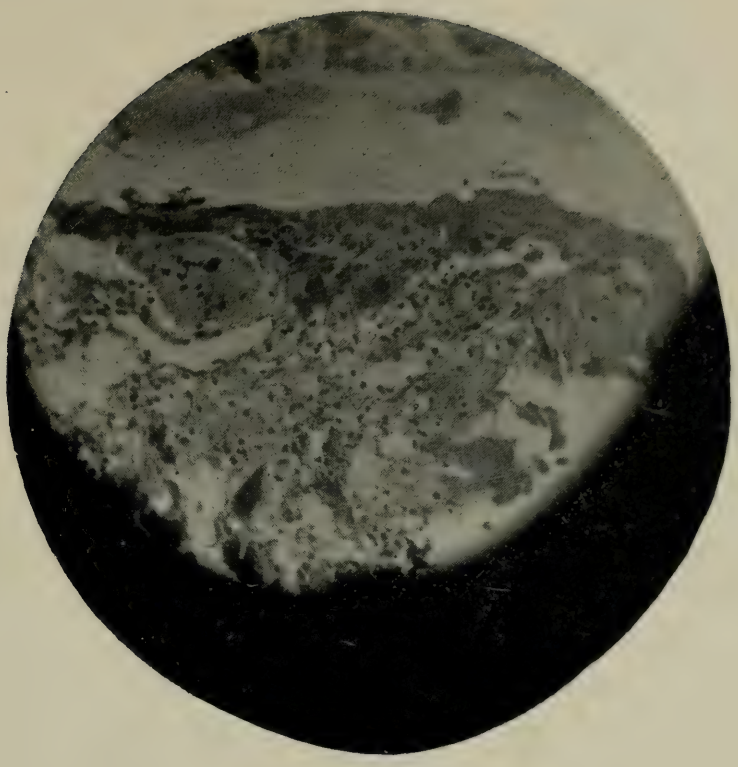


PROCESS CONTAINING SYNCYTIUM.
HIGH POWER.

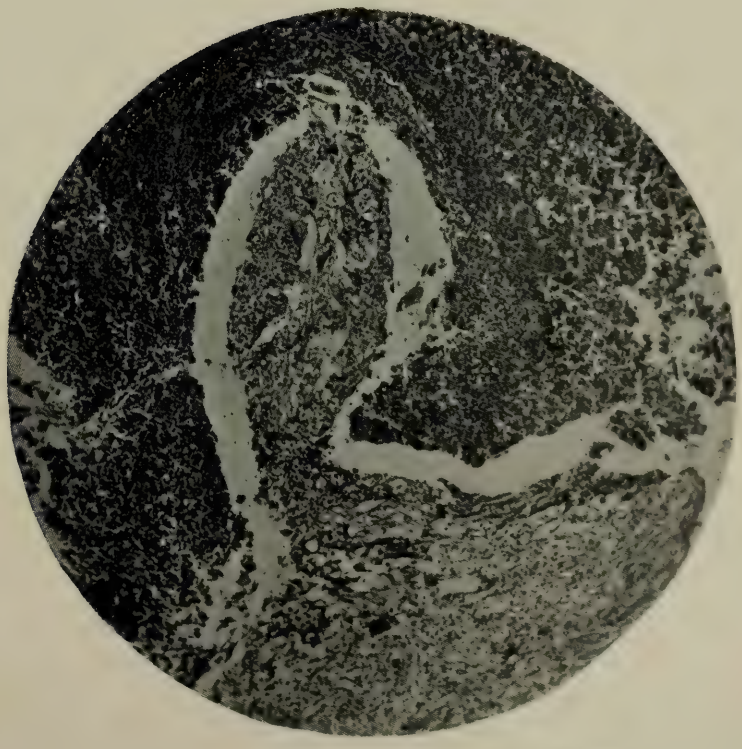


VILLOUSLIKE PROCESS.
LOW POWER.

1 1 Blood spaces.
2 2 Syncytial masses.
3 Blood clot.
4 Cell of Langhams' Layer.



Villous Surrounded by Blood-clot.
(Low Pressure.)



Syncytial Mass with Blood Space.
(High Power.)

large masses of the tumour cells. In many places no supporting tissue is seen, but only large syncytial masses and cells of Langhans, lying loosely arranged in necrotic tissue. Within this loose supporting structure are seen thin walled blood spaces and capillaries.

"The diagnosis of chorionepithelioma is made from the macroscopic appearance, but especially from the microscopic, which at once strikes one, from the cells present, that it is related to the placenta. The irregular arrangement of the various parts to each other, the proliferation of the cells of Langhans, and the fact that the tumour has arisen out of place, all point to its malignancy."

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The tables which follow embody the results of a fairly complete examination of the literature which is extant upon the subject of chorionepithelioma, during the years indicated therein.

Date	Ref. and Report	Age	Pregnancies	Pregnancy Last	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1900	Arndt (G.), Beitrage zur Kent. des Malig chorio-epith.	33	Five	Full time child 4 years ago.	Pain, Bleeding.	Excision of part of nodule in vagina for diagnosis.	Death.	Uterus extending into right parametrium.	Cervix posterior wall, peritoneum and lungs.	Dead fœtus remained in uterus for 5 months.
"	"	45	Seven.	Molar 9 months previously.	Pain in sacrum and right hypogastrium.	Curettage and then hysterectomy.	Death.	Uterus.	Lungs.	
1904	Burdzinski(T.A.), chorion-epithelioma.	27		5th month.	Small tumour, nidus of severe hæmorrhage (Tumour hydatid).	Removal of tumour.	Recovery.	Anterior vaginal wall.		
"	"	44		2 weeks previously.	Hæmorrhages.	Curettage followed by vaginal hysterectomy.	Death in six months.	Posterior wall of uterus.	Vagina, left labium majus and lungs.	
"	"	32		Pregnant at present.	Tumour in left labium 3 weeks before delivery of mole.	Removal of local mass.	Recovery. Reported as well five years later.	Left labium.		
"	"	19		Abortion 5½ months ago.	Hæmorrhage and expulsion of pieces from uterus.	Curettage twice.	Death.	Uterus.		

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1904	Burdzinski (T.A.), chorion-epithelioma.	45	Nine.	Last a full time pregnancy 4 years previously.	Hæmoptysis for two years pain and uterine hæmorrhage.	Curettage.	Death.	Uterus (3 nodules)	Lungs, peritoneal glands and cervix.	
1903	Busse (O.),Ueber chorione-pitheliome die ausserhalb der Placentaust. Virchows, Arch., f. Path. Anat., etc., Berl.	39	Three.	Aborted 6 months previously.	Influenzal symptoms. Paresis, Pain all over body.	None.	Death.	Nothing in uterus.	Heart, liver, lungs, spleen and brain.	Decidual cells found their nidus in uterine veins and spread from there.
1903	Busse, (Ibid.)	30	Seven.	Abortion.	Burning micturition. Pain in abdomen, back right side Hæmorrhage and dyspnoea.	Not stated.	Death.	Post. vaginal wall and right paramet-trium. Uterus and ovaries healthy.	Neigh-bouring organs and lungs.	
1903	Castro Escalada (M.), Semaine Med., Buenos Ayres, 1903. X, 1204–1217.	32	Four.	Abort. ?	Hæmorrhage.	Hysterec-tomy per vaginam.	Died.	Uterus, ant. wall externally and post. wall internally.	None.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1903	Crossen & Fisch, Amer. Gynec., Jan., 1903.	48	Fifteen.	Molar at 4th month.	Blood-stained watery dis-charge commencing six weeks after mole.	Vaginal Hysterec-tomy	Recovery.	Left wall of Uterus high up.	None.	
1900	Fiedler (O.), Beitrag zur Kenntnis der syncytialen Tum-oren., Inaug. Diss., 20 pp., Keil, 1900.	25	Two.	Full term.	On 2nd puerperal week were hæmorrhages. Next period lasted 14 days; anæmia, loss of flesh anorexia, rapid pulse and swelling of abdomen.	Tapping of abdomen, 175 c.c. of fluid removed.	Sudden death.	Post. wall of fundus.	Ligament. hepatic-um.	Cystic ovaries.
1903	Fleischmann (C.) Ubereine seltene von Typus abweichende Form des chorione-pithelioms mit ungewöhnlichen uberlaufe. Monat., *f.* Geb., und Gynak., Berlin, 1903.	30	Three.	Molar pregnancy 2½ years previously.	Amenor. for six months. Uterine enlargement and tumour at introitus vaginae.	Removal of tumour, curettage of uterus, wall of which was perforated by curette.	Cure. Last seen 10 months after operation.	Uterus.	Vaginal wall.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases.	Remarks.
1903	Von Franque (O.), Ueber chorione-pithelioma malignum Ztschr. f. Gebur. u. Gynak., Stutt. 1903	36	Three.	Miscar. at 6th week.	Bleeding with discharge of pieces of clot; sero-sanguin. discharge Anaemia.	Hysterec-tomy.	Death.	Ant. wall of uterus.		
"	"	25	Two.	Full term labour.	Bleeding 8 minutes after labour. Enlargement of uterus.	Curettage, Injection of Ac. Carbolic followed by alcohol. Curettage repeated.	Cure. Was well in Jan., 1903	Post. wall of uterus.		Tissue removed at 1st curett. diseased, at 2nd normal.
"	"	46	Several.	Mole 6 weeks previously	Bleeding, masses in uterus.	Curettage, twice. Hysterec-tomy.	Recovery.	Uterus but when removed, this showed no trace of growth.		Both curettings showed chorione-pithelioma.
1901	Gondre, (L.), De l'epitheliome ectoplacentaire (deciduome malin). These. Toulouse	31	Two.	Abortion 3 years previously.	Anaemia, haemorrhage, uterine enlargement.	Serum injections. Vaginal hysterec-tomy.	Recovery.	Posterior wall of uterus.		

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1901	Gottschall, (P.), Einfall destruiren der Blasenmole mit Uebergang im Syncytioma Malignum, Beitr., z. Geb. u. Gynak., Leipzig., 1901.	30	Two.	Molar.	Bleeding, enlargement of uterus, dyspnoea and rapid pulse.	Abdominal hysterectomy.	Death.	Uterus.	Right broad ligament near end of tube.	
1904	Grein (E.), Ein Fall vom chorioepithelioma malignum, uebst einigen Bemerkungen über Spontanheilung und Therapie bei dieser Erkrankung, Arch. f. Gynak., Berlin, 1904.	27	Three.	Molar at 3rd month.	Fainting, hæmorrhage, uterine enlargement.	Vaginal hysterectomy.	Recovery.	Solitary tumour size of cherry in anterior wall of uterus.		
1904	Hammerschlag, Klinische und anatomische Beitrage zur Lehre vom chorionepitheliom Zeit. f. Geb. u. Gynak., Stuttgart, 1904.	32	Seven.	Molar at 6th month.	Hæmorrhage, cystic ovary.	Hysterectomy and removal of adnexa.	Cured. Well 3½ years after operation	Posterior of uterus near left tubal opening.	Probably ovaries.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1904	Hammerschlag, Klinische und anatomische Beitrage zur Lehre vom chorionepitheliom Zeit. f. Geb. d. Gyna., Stuttgart, 1904.	35	Seven.	Abortion.	Hæmorrhage, uterine enlargement.	Curettage, Vaginal hysterectomy.	Recovery.	Posterior wall of uterus.	Ovaries.	Left ovary cystic.
"	"	40	Eight.	Abortion.	Hæmorrhage and discharge of pieces of flesh. Uterine enlargement.	Uterus, vaginal metastases and right tube and ovary removed.	Death.	Posterior wall of uterus.	Vagina lungs and right ovary.	Ven us thrombosis pulm. art. embol., pneumonia, pleurisy, and gall stones.
"	"	46	Eight	Abortion.	Bleeding, uterine enlargement, vomiting weakness, etc.	Removal of tumour.	Death.	Posterior wall of uterus.	Ovaries.	
"	"	47		Molar.	Fever.	Curetted.	Death.	Right side of uterus.	Broad ligament and right ovary.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1900	Henk (H.), Zwei Fälle von deciduoma, malignum. Vereins. d. pfalz. aertz., Frankenthal, 1900.	21	One	Labour at term.	Hæmorrhage, nodules in vagina.	Excision of uterus ovaries and and vaginal nodules.	Recovery.	Uterine cavity.	Ovaries, and vagina.	
"	"	34	One.	Labour at term.	Hæmorrhage, passage of skinlike subst. and a uterine tumour.	Vaginal hysterectomy and removal of right ovary.	Death.	Right wall of uterus.	Brain, end of right tube.	
1903	Hoche (L.) & Briquel (P.) Les deciduomes vrais, Arch. de med. exper. et d'anat. path., Paris, 1903.	41	Six.	Labour at 8th month.	Expulsion of tumour three days after labour. Menorrhagia and metrorrhagia. Uterine tumour.			Uterus.		Mass expelled resembled chorioepith. Uterine tumour due to fibroids.
1904	Hörman (K.) Ruptur eines chorioepitheliome mit schwerer intraperitonealer Blutung Beit. z. Geb. und Gynak., Leipzig, 1905.	38	Nine.	Molar.	Severe bleeding, abdomin. pain.	Abdomin. hysterectomy.	Death.	Uterine	Intestines.	At operation tumur was seen to be attached to the intestines.

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks
1904	Horrocks, Trans. of Obstet. Society of London.	48	Fourteen.	Abortion at 3rd month, 22 months previously.	Obstinate hæmorrhage; foul discharge; loss of flesh; cough and shortness of breath'	Vaginal hysterectomy.	Not stated.	Upper part of posterior uterine wall which was completely perforated.	Not stated.	
1904	Hinz. G. Zeits. fur Geburts. und Gynak.	33	Five.	Tubal 39 days previously.	Bleeding.	Excision of cornu of uterus with growth.	Death in three months from onset.	Right cornu of uterus.	Lungs, liver and abdomin. and pelvic cavities.	
1903	Josselin de Jong., chorionepitheliom Nederl. Tijdschr. v. Verlosk. en Gynall., Haarlem, 1904.	45	First.	Abortion.	Bleeding, passage of tissue and enlargement of uterus.	Curettage, too late for more radical treatment.	Not stated.	Uterus, cervix.	Vagina.	
1903	Finkielkrant (B.) chorioepithal. mailg. Gaz. Warszawa.	26	Five.	Menses stopped 8 months ago (6th preg.)	Bleeding began 4 months ago, for which she was curetted.	Hysterectomy per vaginam.	Not stated.	Superior part of posterior wall of of uterus.	Vagina.	
1904	Keilmann, chorionepitheliom St. Petersb., Med. 48, Wehnschr, 1904. XXIX.	48	Six.	Sept. 1901. pat. thought herself pregnant and to have aborted.	Hæmorrhage, which curettage only stopped temporarily, Anæmia, uterine enlargement.	Vagial hysterectomy.	Death.	Anterior wall of uterus.	Vagina	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1903	Schmauch, (G.), Syncytioma Das malig. vaginale Zeits. f. Geb. und Gynäk., Stutt., 1903. XLIX.	25	Four.	Full term labour.	Severe hæmorrhage after labour.	Rest in bed, curettage, vagina tamponed.	Death.	?	Metastases found all over body and no primary tumour.	
1904	Krönig. (B.) Deciduom. Deutsch. Klinik., Berl. u. Wien., 1904, IX.	34		Molar, one month previous.	Severe hæmorrhage.	Abdominal hysterectomy.	Recovery.	Anterior wall of uterus.	None.	
1904	Littaver, (A)., Beitrage zur Frage der Malig.-natür des chorionepithelioms. Arch. f. Gynäk., Berlin, 1904. LXXII.	26		Last menses July 20th 1903. Pregnancy ended in miscarriage.	Hæmorrhages. Uterus large and soft. Mass size of cherry on uterine wall.	Curetted twice, the second giving healthy mucosa.	Recovery.	Posterior wall of uterus.	None.	Disease non-malig. in this case.
1900	Macaggi, (L.) Un caso di deciduoma malig., Rassegna d'Obstet. e Ginec Napoli., 1900, IX.	39	Nine.	Molar.	Respiratory troubles, Diagnosis on admission was retained products of conception, septic endometritis, pyæmia and suppurative hepatitis. No nervous symptoms.	Curettage.	Death.	Anterior wall of fundus.	Lungs, liver, spleen, right ovary and brain.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1901	Marchesi, (P.), Sulla mola destruente. Arch. de ostet. e ginec., Napoli., 1901. VIII.	43	Nine.	Molar at 4th month.	Nausea, weakness, anorexia, anæmia, enlarged abdomen and uterus. Brown hæmorrhagic discharge.	Plugging and digital emptying of uterus.	Death.	Right side of anterior wall of uterus.	Ovaries, ?	
1900	Marchesi, (P.), Sul corio-epith., e sui rapporti anatomici e clinici con la mola vesiculare, Ann. di Ostet. Milano, 1900., XXII.	45	Five.	Molar.	Amenorrhœa, followed by hæmorrhage.	Curettage, followed some time later by vaginal hysterectomy.	Recovery.	Uterus.	Anterior vaginal wall near urethral orifice.	
1903 1904	Nisot-Wuyto, Un cas de deciduome malin., Bull. Soc. belge de gynéc. et d'obstet. Brux., 1903-04., XIV.	37	Seven.	Missed abortion.	Pain in left illiac fossa, hæmorrhage, latter being uncontrollable.	Curettage. Removal of vaginal tumours.	Death after temporary improvement.	Uterus.	Vagina.	
1901	Nordentoft, (S.T.), Syncytioma Uteri. Hosp. Tid., Kobenk., 1901., 4 R., IX.	47	Sixteen.	?	Continuous vaginal hæmorrhage.	Cautery, excision of vaginal masses, plugging.	Death in 9 months from onset.	Uterus.	Vagina and gums.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1903	Bœrma, (N.J.A.F.), En geval von chorio-epith. malig. Nederl., Tijdschr. v. Genusk., 1903 2 R., XXXIX.	22	?	Mole.	Irregular hæmorrhages.	Curettage followed by vaginal hysterectomy.	Recovery.	Posterior wall of uterus low down.	Extremity of right tube.	
1904	Roeb, (M.), Beitrag. zur Lehre des chorionepith. malig. nebst Bemerkungen uber Diag., Arch. f. Gynäk., Berlin, 1904. LXXI.	26	Five.	Abortion.	Hæmorrhage.	Polypus twisted off, curettage, and vaginal hysterectomy.	Death.	Posterior wall of uterus at entrance of left tube.	Lungs, tissue behind bladder and in the vagina.	Heart degenerated and spermatic veins full of clots.
"	"	46	Ten.	Abortion.	Hæmorrhage and expulsion of placental remains.	Hysterectomy.	Recovery.	Upper part of posterior wall of fundus.	None.	
1903	Von Rosthorn, (A.), Ein Beitrag zur Lehre von chorionepith. Beitrag z. Geb. u. Gyn., Rudolf Chrobak, 60 Wien, 1903.	28	Three.	Not stated.	Hæmorrhage with anæmia, cardiac syst. murmur.	Excision with vaginal wall.	Death.	Hæmangio-endothelioma glandulare supra-renale lateris sinistri.	Brain, liver, uterus, vagina. Bronchitis.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1903	Risel, (W.), Uber die maligne chorionepitheliome und die Wischerungen in Hodenteratomen, VI.	43	Ten.	?	Cough, paralysis of right arm and leg, headaches. Menses eight days too early. vomiting.	None.	Death.	Uterus.	Vagina, lungs, bronchi, lymphatics heart, brain, liver, kidneys, intestines, skin, thyroid, etc.	
1903	"	53¼	Twelve.	Hydatid mole.	Bleeding.	Hysterectomy.	Recovery.	Uterus.	None.	
"	"	24	Two.	Hydatid mole.	Severe bleeding.	Curettage, followed by removal of uterus and part of the vagina.	Recovery.	Uterus.	Vagina.	
"	"	29	Two.	Hydatid. mole.	Intractable hæmorrhage.	Removal of uterus, ovaries and part of vagina.	Death.	Uterus.	Brain, lungs and vagina.	
"	"	37	Two.	Abortion.	Brown discharge, and bleeding.	Removal of uterus and upper part of vagina.	Death.	Uterus.	None.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
"	Risel, Ibid.	45	Six.	Hydatid mole.	Bleeding, headache and right paralysis.	Curettage.	Death.	Uterine mucous membrane	Brain, kidney and lungs.	No tumour in uterus or tubes.
"	"	48	?	Hydatid mole.	Hæmorrhage. Masses in uterus.	Curetted.	Recovery. Well 4½ years later.	Uterus.	None.	
"	"	26	?	Abortion.	Hæmorrhages and masses in vagina.	Curetted.	Recovery.	Uterus.	None.	
1903	Rosenblatt, (S.), Syncytioma malig. uteri. Sborn. protak. i. trud. Obstet., Kaluz. vrach., (1901–2). 1903. 43–47.	38	Five, last but one hydatid.	Full term pregnancy with adherent placenta.	Hæmorrhage, pain in the abdomen, vertigo, weakness.	Curettage, hysterectomy advised but refused by the patient.	Death in four months.	To the left side of fundus.		
1902	Schmidt (Johanna), zur kasuistik. des chorioepith. malig. Inaug. Dis. 57 pp. D. 1 pl. 8., Strasburg. i. C., 1902.	27	Two.	Full term labour 10 months ago.	Hæmorrhage, weakness and swelling of genitals.	Excision of masses in the vagina.	Hæmor. from the vaginal wound. Death.	Region of ending of the right tube.	Vagina, ovaries, right tube, pleura, right lung, liver, right kidney, rectum and right parametrium.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
"	Schmidt (J.) Ibid.	39	Three.	Full term labour 4 weeks previous to onset of symptoms.	Severe bleeding and anæmia.	Manual removal of uterine tumour. Curettage.	Death.	Cervix and and posterior wall of fundus.	Vagina and lungs.	
"	"	42	Five.	Abortion. Last menses July 26th, 1900.	Began to bleed in Sept., 1900, and this was followed by foul discharge.	Curettage. Vaginal hysterectomy.	Death two hours after operation.	Posterior wall of uterus, and ends of both tubes.	None. (? F.L.)	Thrombosis of pulmonary veins.
"	"	39	Five.	Nature of last pregnancy doubtful.	Bleeding, followed by foul discharge.	Abdominal hysterectomy.	Recovery.	Posterior wall of uterus and right tubal ending.	Posterior comissure.	Ovum had remained in uterus throughout.
1902	Schmidt, (O.), Ueber einen Fall von chorion-epithelioma malig., Centralblatt fur Gynæcolog. Leipzic, 1902, XXVI. 1100–1102.	23		1st pregnancy. Menses missed in Sept., 1901. Molar pregnancy.	Since middle Dec., 1901, paitent had severe diarrhœa, albumen and hyaline casts in urine, heart murmur, œdema of feet; fever, headache, enlargement of uterus, bleeding from uterus.	Curettage, followed by vaginal hysterectomy some months later.	Recovery.	Uterus, near internal os.	None.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1904	Siefert, (E.), Ueber die Hirnmetastasen des sogennanten Deciduoma malignum. Arch. fur Psychiat., Berlin, 1904. XXXVIII., 1–21.	25	Four.	Full term.	Hæmorrhage beginning 9 weeks after labour. Hæmorrhage very severe. Headaches. Partial aphasia for two weeks.	Curettage.	Death in about four months.	Endo-metrium.	Lungs, spleen, liver, left kidney, brain, pia mater.	
1903	Simmonds, Uber einen Fall von chorion-epithelioma malig. Munchen, med., Wchschr., 1903, I. 136.	20		Abortion.	Severe hæmorrhages following abortion.	Curettage.	Death one month after operation.	One large and several small tumours in uterus.	Parame-trium, liver, spleen, and in bone marrow.	Ovaries cystic.
1903	Steidl, Ein Fall von Deciduom. Munchen. Med., Wochen., 1903, L. 972.	26	Five.	Full term.	Profuse hæmorrhage.	Removal of uterus and appendages.	Death 30 days after operation.	Uterus.	Vagina, stump, lungs and mesentery.	
1900	Kaufmann, Ein Fall von malig. chorionepithel. cor.-Bl. f. Schmitz Herzte, Basel, 1900. XXX. 306–309.	31	Five.	Full term.	Cough, pain in breasts, prof. menstr., bleeding.	Hysterec-tomy.	Death 2 months after operation.	Corpus uteri.	Kidneys, spleen, ovaries, pleura and lungs.	Matastases passed through veins to other organs.

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1900	Schwitalski, chorioepithelioma malig. uteri. (decid. malig.) Przegl. lek., Krakow, 1900. XXXIX. 529, 545.	53	Nine.	Full term eight years ago.	Menses irreg. for some years with pain in abdomen and sacrum. Repeated hæmorrhages.	Vaginal hysterectomy.	Recovery.	Posterior wall of uterus.	None. reported.	
"	"	26	Two.	Hydatid mole six months ago.	Bleeding since birth mole.	Curettage.	Death.	Anterior wall of uterus.	Vagina, external genitals. Pouch of Douglas and left fornix.	Too late for radical operation.
1900	Wömpenr, (M)., Ein Fall von deciduoma malig. Inaug. Diss. 15 pp., 2 l., Kiel, 1900.	30	Two.	Full term.	Severe hæmorrhage five weeks after last labour.	Curettage.	Death.	Fundus uteri.	Lungs.	
1904	Von Zaborghi, (I.) chorioepithelioma esete. Gynækol, Budapest, 1904, 71–74.	47	Nine.	?	Severe discharge mixed with blood.	Colpotomy.	Death half an hour after operation.	In corpus uteri, to the right and behind.	Vagina and both lungs.	
1904	Vertel, (B.V.), chorioepithelioma J. akush i zhensk. boliezn. St. Petersburg, 1904. XVIII. 906–916.				Hæmorrhages several months after labour.	Repeated curettage followed by hysterectomy.	Recovery.	Uterus.	Vagina and probably appendages.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1903	Williams, Jour. of Gyn. and Obstet. of British Empire.	23	Four.	Hydatid mole 15 months. ago.	Bleeding. Swelling in vagina for 5 months causing pain and discomfort, Dysuria. Last 10 days, cough, shortness of breath and expectoration.	None.	Death.	Uterus. near centre of posterior wall.	Lungs and vagina.	Cystic ovaries.
1903	Malcolm & Bell, Jour. of Obstet. and Gyn. of Brit. Empire. Dec., 1903.	40	Four.	Hydatid mole 2½ months ago.	Hæmorrhage, fever, pain and vomiting.	Hysterectomy three weeks after expulsion of mole.	Cure.	Uterus.	None.	Cystic ovaries with twisted pedicle.
1904	Jaffé, Arch. für Gynäk. 1903.	39	Ten.	Mole at 5½ months.	Bleeding.	Hysterectomy.	Not stated.	Right horn of uterus.	None mentioned	Lutein cysts of both ovaries.
1902	Austerlitz, Monats. für Geb. und Gynäk., April, 1902.	23	?	Abortion six months previously.	Bleeding and cramping pains.	Vaginal hysterectomy.	Death 4 months later.	Fundus uteri.		
1902	Landau & Pick, Archives für Gynäk.	20		Abortion.	Cough, bleeding from uterus after 2½ months amenorrhœa.	Curettage and excision of masses in the vagina.	Free from disease twelve months later.	Left side of lower vagina.		Patient was unmarried.

Date	Ref .and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1904	Lockyer, (N.), The Practitioner, Dec., 1904.	26	Two.	Full term four weeks ago.	Dragging pain in vagina and brown discharge 10 days post-partum. Lump in groin 21 days, post-part.	None.	Death eleven weeks after labour.	Uterus.	Right labium majus, left groin, lungs, both kidneys and anterior vaginal wall.	Excess of lutein tissue in ovaries.
1904	McCann, (F.J.), Jour. of Obstet. and Gyn. of Brit. Empire, 1904.	35	Five.	Miscar. at 2nd month one year ago.	Hæmorrhage. Loss of weight.	Hysterectomy.	Cure.	Upper part of posterior wall of fundus.		Well 2 years later.
"	"	46	Six.	Full term, 9 years ago.	Hæmorrhage.	Douching.	Death in five months.	Uterus.	Lungs and vagina.	
1904	Savage, Brit. Med. Jour., 19/11/04.	50	Nine.	Mole.	Hæmorrhage, commencing one month after delivery of mole.	Vaginal hysterectomy 11 weeks after delivery of mole.	Recovery.	Interior of uterus.	None.	Well at end of six months.
1904	Martin, Christ'r, Brit. Med. Jour., 19/11/04.	50	Fourteen.	Full term, 12 years ago.	Constant hæmorrhage for 12 weeks; loss of flesh; shortness of breath and mitral systolic bruit.	Vaginal hysterectomy.	Recovery.	Uterus.	None.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
1904	Wilson. Thos., Brit. Med. Jour., 19/11/04.	22	One.	Mole 11 months ago.	Hæmorrhage, and increase in size of uterus and loss of weight.	None.	Death in 18 months from onset of symptoms.	Uterus.	Liver and lungs.	
1904	Windsor & Fairbairn, Brit. Med. Jour., 19/11/04.	24	One.	Full term, 8 months ago.	Hæmorrhage and weakness for several months.	Curettage, followed in 3 weeks by vaginal hysterectomy.	Death six weeks later.	Posterior wall of uterus.	Liver.	
1905	Condon, (A.P.), Med. Record, April 29th, 1905.	38	Nine.	Miscar. at 5th month 2 years ago.	Flowing, pain in lower abdomen, loss of flesh, nausea and vomiting.	Cauterization of vaginal wall.	Death in twenty days.	Left wall of uterus.	Lungs and vagina.	
1905	Lockhart & Gillies, Mont. Med. Jour July, 1905.	47	Two.	Mole 4½ years ago.	Metrorrhagia, loss of flesh and strength, and a tumour in the vagina.	Curettage. Excision of mass in vagina.	Death at end of four months.	Anterior wall of vagina near introitus and left parametrium.	Lungs and vagina.	
1904	V. Toth. (S.), chorionepithel. Gynecologia, Budapest, 1904. 1–28, 2 pl.	22	Two.	Early abortion.	Severe hæmorrhage.	Hysterectomy.	Death four months later from cerebral embolism.	Uterus.	Brain.	

Date	Ref. and Report.	Age	Pregnancies.	Last Pregnancy	Symptoms.	Treat.	Result.	Primary Tumour.	Metastases	Remarks.
"	"	44	Thirteen.	Abortion.	Hæmorrhages.	None.	Death.	Uterus and posterior vaginal wall.	Lungs.	
1900	Vautrin., Decid. malin. Soc. de Med. de Nancy, C.-2, 1899–1900. pp. CXIII.-CXIV	32	Two.	Abortion.	Frequent and serious floodings.	Abdominal hysterectomy.	Recovery.	Uterus, supero-lateral wall.	None.	
1901	Vautrin, Decid. malin. Soc. de Med de Nancy, C.-2, 1900–1901. p. 122.	27	Three.	Abortion at fourth month.	Uterus soft, cervix open, fundus above pubes and painful.	Curettage, followed two days later by vaginal hysterectomy.	Cure.	Posterior wall of uterus.	None.	
1904	Von Velits. (D.) Uber histologische Indicien des chorioepithel. "henignum." Zeits. für Geburtsh. u. Gynäk., Stuttgart, 1904, LII., 301–355, 2 pl.	39	Eight.	Abortion.	Hæmorrhage.	Removal of uterus and right ovary per vaginam.	Recovery.	Whole length of posterior wall of uterus.	Right ovary.	

UNITY, PEACE AND CONCORD.

A Farewell Address delivered to the Medical Profession of the United States

BY

WILLIAM OSLER, M.D.,

Regius Professor of Medicine, Oxford University,

On this occasion I have had no difficulty in selecting a subject on which to address you. Surely the hour is not for the head but for the heart, out of the abundance of which I may be able to express, however feebly, my gratitude for the many kindnesses I have received from the profession of this country during the past twenty-one years, and from you, my dear colleagues of this state and city, during the sixteen years I have dwelt among you. Truly I can say that I have lived my life in our beloved profession—perhaps too much! but whatever success I have had has come directly through it and my devotion is only natural. Few men have had more from their colleagues than has fallen to my lot. As an untried young man my appointment at McGill College came directly through friends in the faculty who had confidence in me as a student. In the ten happy years I lived in Montreal I saw few but physicians and students, among whom I was satisfied to work—and to play. In Philadelphia the hospitals and the societies absorbed the greater part of my time, and I lived the peaceful life of a student with students. An ever-widening circle of friends in the profession brought me into closer contact with the public, but I have never departed from my ambition to be first of all a servant of my brethren, willing and anxious to do anything in my power to help them. Of my life here you all know I have studied to be quiet and to do my own business and to walk honestly toward them that are without and one of my chief pleasures has been to work among you as a friend, sharing actively in your manifold labours. But when to the session of sweet, silent thought I summon up the past, not what I have done, but the many things I have left undone, the opportunities I have neglected, the battles I have shirked, the precious hours I have wasted—these rise up in judgment.

A notable period it has been in our history through which we have lived, a period of reconstruction and renovation, a true renaissance, not only an extraordinary revival of learning, but a complete transformation in our educational methods; and I take pride in the thought that, in Philadelphia and in this city, I have had the good fortune to be closely

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* Delivered at the Annual Meeting of the Medical and Chirurgical Faculty of Maryland, Baltimore, April 26, 1905, and published under arrangement with the *Journal of the American Medical Association.*

associated with men who have been zealous in the promotion of great reforms, the full value of which we are too close to the events to appreciate. On the far-reaching influence of these changes time will not permit us to dwell. I propose to consider another aspect of our work of equal importance, neither scientific nor educational, but what may be called humanistic, as it deals with our mutual relations and with the public.

Nothing in life is more glaring than the contrast between possibilities and actualities, between the ideal and the real. By the ordinary mortal, idealists are regarded as vague dreamers, striving after the impossible, but in the history of the world how often have they gradually molded to their will conditions the most adverse and hopeless! They alone furnish the *Geist* that finally animates the entire body and makes possible reforms and even resolutions. Imponderable, impalpable, more often part of the moral than of the intellectual equipment, are the subtle qualities so hard to define, yet so potent in everyday life by which these fervent souls keep alive in us the reality of the ideal. Even in a lost cause with aspirations utterly futile, they refuse to acknowledge defeat and, still nursing an unconquerable hope, send up the prayer of faith in face of a scoffing world. Most characteristic of aspirations of this class is the petition of the Litany in which we pray that to the nations may be given "unity, peace and concord." Century after century from the altars of Christendom this most beautiful of all prayers has risen from lips of men and women, from the loyal souls who have refused to recognize its hopelessness, with the war-drums ever sounding in their ears. The desire for unity, the wish for peace, the longing for concord, deeply implanted in the human heart, have stirred the most powerful emotions of the race, and have been responsible for some of its noblest actions. It is but a sentiment, you may say, but is not the world ruled by feeling and by passion? What but a strong sentiment baptized this nation in blood, and what but sentiment, and deep-rooted affection for country which is so firmly implanted in the hearts of all Americans, gives to those states to-day unity, peace and concord? As with the nations at large, so with the nation in particular, as with people so with individuals, and as with our profession so with its members, this fine old prayer for unity, peace and concord, if in our hearts as well as on our lips, may help us to realize our aspirations. What some of its lessons may be to us will be the subject of my address.

Unity.

Medicine is the only world-wide profession, following everywhere the same methods, actuated by the same ambitions and pursuing the same

ends. This homogeneity, its most characteristic feature, is not shared by the law, and not by the church, certainly not in the same degree. While in antiquity the law rivals medicine, there is not in it that extraordinary solidarity which makes the physician at home in any country, in any place where two or three sons of men are gathered together. Similar in its high aims and in the devotions of its officers, the Christian Church, widespread as it is, and saturated with the humanitarian instincts of its Founder, yet lacks that catholicity—*urbi et orbi*—which enables the physician to practice the same art amid the same surroundings in every country of the earth. There is a unity, too, in its aims—the prevention of diseases by discovering their causes, and the cure and relief of sickness and suffering. In a little more than a century a united profession working in many lands has done more for the race than has ever before been accomplished by any other body of men. So great have been these gifts that we have almost lost our appreciation of them. Vaccination, sanitation, anæsthesia, antiseptic surgery, the new science of bacteriology, and the new art in therapeutics have effected a revolution in our civilization to which only can be compared the extraordinary progress in the mechanical arts. Over the latter there is this supreme advantage, it is domestic—a bedroom revolution, which sooner or later touches each one of us, if not in person, in those near and dear—a revolution which for the first time in the history of poor, suffering humanity brings us appreciably closer to that promised day when the former things should pass away, when there should be no more unnecessary death, when sorrow and crying should be no more, and there should not be any more pain.

One often hears as a reproach that more has been done in the prevention than in the cure of disease. It is true, but this second part of our labours has also made enormous progress. We recognize to-day limitations of the art, we know better the diseases curable by medicine, and those which yield to exercise and fresh air; we have learned to realize the intricacy of the processes of disease and have refused to deceive ourselves with half knowledge, preferring to wait for the day instead of groping blindly in the dark or losing our way in the twilight. The list of disease which we can positively cure is an ever-increasing one, the number of diseases the course of which we can modify favourably is a growing one, the number of incurable diseases (which is large and which will probably always be large) is diminishing—so that in this second point we may feel that not only is the work already done of the greatest importance, but that we are on the right path, and year by year as we know disease better we shall be able to treat it more successfully. The united efforts of countless workers in many lands

have won these greatest victories of science. Only by ceaseless co-operation and the intelligent appreciation by all of the results obtained in each department has the present remarkable position been reached. Within a week or ten days a great discovery in any part of the world is known everywhere, and, while in a certain sense we speak of German, French, English and American medicine, the differences are trifling in comparison with the general similarity. The special workers know each other and are familiar with each other's studies in a way that is truly remarkable. And the knowledge gained by the one, or the special technique he may devise, or the instrument he may invent is at the immediate disposal of all. A new life-saving operation of the first class devised by a surgeon in Breslau would be performed here the following week. A discovery in practical medicine is common property with the next issue of the weekly journals.

A powerful stimulus in promoting this wide organic unity is our great international gatherings, not so much the International Congress of the profession, which has proved rather an unwieldy body, but of the special societies which are rapidly denationalizing science. In nearly every civilized country medical men have united in great associations which look after their interests and promote scientific work. It should be a source of special pride to American physicians to feel that the national association of this country—the American Medical Association—has become one of the largest and most influential bodies of the kind in the world. We can not be too grateful to men who have controlled its course during the past ten years. The reorganization so efficiently carried out has necessitated a readjustment of the machinery of the state societies, and it is satisfactory to know that this meeting of our state society, the first held under the new conditions, has proved so satisfactory. But in the whole scheme of readjustment nothing commands our sympathy and co-operation more than the making of the country societies, the materials out of which the state and national associations are built. It is not easy at first to work out such a scheme in full detail, and I would ask of the members of this body not only their co-operation, but an expectant consideration, if the plan at first does not work as smoothly as could be desired. On the country members I would urge the support of a plan conceived on broad national lines—on you its success depends, and on you its benefits will chiefly come.

Linked together by the strong bonds of community of interests, the profession of medicine forms a remarkable world-unit, in the progressive evolution of which there is a fuller hope for humanity than in any other direction.

Concentration, fusion and consolidation are welding together various sub-units in each nation. Much has been done, much remains to do, and to three desiderata I may refer briefly.

In this country reciprocity between the state licensing boards remains one of the most urgent local needs. Given similar requirements, and examinations practically of the same character, with evidence of good character, the state board should be given power to register a man on payment of the usual fee. It is preposterous to restrict in his own country, as is now done, a physician's liberty. Take a case in point: A few months ago a man who is registered in three states, an able, capable practitioner of twenty years' standing, a hard student in his profession, a physician who has had charge of some of the most important lives of this country, had to undergo another examination for license. What an anomaly! What a reflection on an united profession! I would urge you all most strongly to support the movement now in progress to place reciprocity on a proper basis. International reciprocity is another question of equal importance, but surrounded with greater difficulties and, though a long way off, it will come within this century.

The second urgent need is a consolidation of many of our medical schools. Within the past twenty-five years conditions have so changed that the tax on the men in charge of the unendowed schools has become even more burdensome. In the old days of a faculty with seven professors, a school with 300 students was a good property, paying large salaries, but the introduction of laboratory and practical teaching has so increased the expenses that very little is now left for distribution at the end of the year. The students' fees have not increased proportionately, and only the self-sacrifice and devotion of men who ungrudgingly give their time, and often their means, save a hopeless situation. A fusion of the schools is the natural solution of the problem. Take a concrete example: A union of three of the medical schools of this city would enable the scientific departments to be consolidated at an enormous saving of expense and with a corresponding increase in efficiency. Anatomy, physiology, pathology, physiologic chemistry, bacteriology and pharmacology could be taught in separately organized departments which the funds of the united school could support liberally. Such a school could appeal to the public for aid to build and endow suitable laboratories. The clinical work could be carried on at the separate hospitals, which would afford unequaled facilities for the scientific study of disease. Not only in this city, but in Richmond, in Nashville, in Columbus, in Indianapolis and in many cities a "merger" is needed. Even the larger schools of the larger cities could "pool" their scientific interests to the great advantage of the profession.

And the third desideratum is the recognition of our homœopathic brethren that the door is open. It is too late in this day of scientific medicine to prattle of such antique nonsense as is indicated in the "pathies." We have long got past the stage when any "system" can satisfy a rational practitioner, long past the time when a difference of belief in the action of drugs—the most uncertain element in our art!—should be allowed to separate men with the same noble traditions, the same hopes, the same aims and ambitions. It is not as if our homœopathic brothers are asleep—far from it—they are awake—many of them at any rate—to the importance of the scientific study of disease, and all of them must realize the anomaly of their position. It is distressing to think that so many good men live isolated, in a measure, from the great body of the profession. The original grievous mistake was ours—to quarrel with our brothers over infinitessimals was a most unwise and stupid thing to do. That we quarrel with them now is solely on account of the old Shibboleth under which they practice. Homœopathy is as inconsistent with the new medicine as is the old-fashioned polypharmacy, to the death destruction of which it contributed so much. The rent in the robe of Æsculapius, wider in this country than elsewhere, could be repaired by mutual concessions—on the one by the abandonment of special designations, and, on the other, by an intelligent toleration of therapeutic vagaries which in all ages have beset the profession, but which have been mere flies on the wheels of progress.

Peace.

Many seek peace, few pursue it actively, and among these few we, alas! are not often to be found. In one sense every one of us may be asked the question which Jehu returned to Joram: "What hast thou to do with peace?" since our life must be a perpetual warfare, dominated by the fighting spirit. The physician, like the Christian, has three great foes—ignorance, which is sin; apathy, which is the world, and vice, which is the devil. There is a delightful Arabian proverb, two lines of which run: "He that knows not and knows not that he knows not is a fool—shun him. He that knows not and knows that he knows not is a simple—teach him." To a large extent these two classes represent the people with whom we have to deal. Teaching the simple and suffering the fools gladly, we must fight the wilful ignorance of the one and the helpless ignorance of the other, not with the sword of righteous indignation, but with the skillful weapon of the tongue. On this ignorance the charlatan and the quack live, and it is by no means an easy matter to decide how best to conduct a warfare against these wily foes, the oldest and most formidable with whom

we have to deal. As the incomparable Fuller remarks: "Well did the poets feign Æsculapius and Circe, brother and sister . . . . for in all times (in the opinion of the multitude) witches, old women and imposters have had a competition with doctors." Education of the public of a much more systematic and active kind is needed. The congress of quackery, which is announced to take place in Paris, with some twenty-five subjects for discussion, indicates one important method of dealing with the problem. The remarkable exhibit held last year in Germany of everything relating to quacks and charlatans did an immense good in calling attention to the colossal nature of the evil. A permanent museum of this sort might well be organized in Washington in connection with the Department of Hygiene. It might be worth while to imitate our German brethren in a special national exhibit, though I daresay many of the most notorious sinners would apply for large space, not willing to miss the opportunity for a free advertisement! One effective measure is enforced in Germany. Any proprietary medicine sold to the public must be submitted to a government analyst, who prepares a statement (as to its composition, the price of its ingredients, etc.), which is published at the cost of the owner of the supposed remedy in a certain number of the daily and weekly papers.

By far the most dangerous foe we have to fight is apathy—indifference from whatever cause, not from a lack of knowledge, but from carelessness, from absorption in other pursuits, from a contempt bred of self-satisfaction. Fully 25 per cent. of the deaths in the community are due to this accursed apathy, fostering a human inefficiency, and which goes far to counterbalance the extraordinary achievements of the past century. Why should we take pride in the wonderful railway system with which enterprise and energy have traversed the land when the supreme law, the public health, is neglected? What comfort in the thought of a people enjoying great material prosperity when we know that the primary elements of life (on which even the old Romans were our masters) are denied to them. What consolation does the "little red school house" afford when we know that a Lethean apathy allows toll to be taken of every class from the little tots to the youths and maidens? Western civilization has been born of knowledge, of knowledge won by hard, honest sweat of body and brain, but in many of the most important relations of life we have failed to make that knowledge effective. And strange irony of life, the lesson of human efficiency is being taught us by one of the little nations of the earth, which has so far bettered our instruction that we must again turn eastward for wisdom. Perhaps in a few years our civilization may be put on trial, and it will not be without benefit if it arouses the individual from apathy and makes him conscious of the great truth that

only by earnest individual human efforts can knowledge be made effective, if it arouses communities from an apathy which permits mediæval conditions to prevail without a protest.

Against our third great foe, vice in all its forms, we have to wage an incessant warfare, which is not less vigorous because of the quiet, silent kind. Better than any one else the physician can say the word in season to the immoral, to the intemperate, to the uncharitable in word and deed. Personal impurity is the evil against which we can do most good, particularly to the young, by showing the possibility of the pure life and the dangers of immorality. Had I time, and were this the proper occasion, I would like to rouse the profession to a sense of its responsibility towards the social evil—the black plague which devastates the land. I can but call your attention to an important society, of which Dr. Prince Morrow of New York is the organizer, which has for one of its objects the education of the public on this important question. I would urge you to join in a crusade quite as important as that in which we are engaged against tuberculosis.

Concord.

Unity promotes concord—community of interests, the same aims, the same objects give, if anything can, a feeling of comradeship, and the active co-operation of many men, while it favours friction, lessens the chances of misunderstanding and ill-will. One of the most gratifying features of our professional life is the good feeling which prevails between the various sections of the country. I do not see how it could be otherwise. One has only to visit different parts and mingle with the men to appreciate that everywhere good work is being done, everywhere an earnest desire to elevate the standard of education, and everywhere the same self-sacrificing devotion on the part of the general practitioner. Man will tell you that commercialism is rife, that the charlatan and the humbug were never so much in evidence, and that in our ethical standards there has been a steady declension. These are the Elijahs who are always ready to pour out their complaints, mourning that they are not better than their fathers. Few men have had more favourable opportunities than I have had to gauge the actual conditions in professional private life, in the schools, and in the medical societies, and as I have seen them in the past twenty years I am filled with thankfulness for the present and with hope for the future. The little rift within the lute is the absence in many places of that cordial professional harmony which should exist among us. In the larger cities professional jealousies are dying out. Read Charles Caldwell's "Autobiography" if you wish for spicy details of the quarrels of the doctors in the first half of the last century in this country. I am sorry

to say the professors have often been the worst offenders, and the rivalry between medical schools has not always been friendly and courteous. That it still prevails to some extent must be acknowledged, but it is dying out, but not so rapidly as we could wish. It makes a very bad impression on the public, and is often a serious stumbling block in the way of progress. Only the other day I had a letter from a most intelligent and appreciative layman who was interested in a large hospital scheme about which I had been consulted. I quote this sentence from it in sorrow, and I do so because it is written by a strong personal friend of the profession, a man who has had long and varied experience with us: "I may say to you that one of the distressing bewilderments of the layman who only desires the working out of a broad plan is the extraordinary bitterness of professional jealousy between not only school men and non-school men, but between school men themselves, and the reflections which are cast on one another as belonging to that clique, which makes it exceedingly difficult for the layman to understand what way there is out of these squabbles."

The national and special societies, and particularly the American Medical Association, have brought men together and have taught them to know each other and to appreciate the good points which at home may have been overlooked. As Dr. Brush said yesterday in his address, it is in the smaller towns and country districts that the conditions are most favourable for mutual misunderstandings. Only those of us who have been brought up in such surroundings can appreciate how hard it is for physicians to keep on good terms with each other. The practice of medicine calls equally for the exercise of the heart and the head, and when a man has done his best, to have his motives misunderstood and his conduct of a case harshly criticized, not only by the family, but by a colleague who has been called in, small wonder, when the opportunity arises, if the old Adam prevails and he pays in kind. So far as my observation goes there are three chief causes for the quarrels of doctors. The first is lack of proper friendly intercourse by which alone we can know each other. It is the duty of the older man to look on the younger one who settles near him not as a rival, but as a son. He will do to you just what you did to the old practitioner, when, as a young man, you started—get a good many of your cases; but if you have the sense to realize that this is inevitable, unavoidable, and the way of the world, and if you have the sense to talk it over, in a friendly way, the first delicate situation that arises, the difficulties will disappear and recurrences may be made impossible. The young men should be tender with the sensibilities of their seniors, deferring to their judgment and taking counsel with them. If young graduates could be taken more frequently as assistants or partners, the

work of the profession would be much lightened and it would promote amity and good fellowship. A man of whom you may have heard as the incarnation of unprofessional conduct, and who has been held up as an example of all that is pernicious, may be, in reality, a very good fellow, the victim of petty jealousies, the mark of the arrows of a rival faction, and you may, on acquaintance, find that he loves his wife and is devoted to his children, and that there are people who respect and esteem him. After all, the attitude of mind is the all-important factor in the promotion of concord. When a man is praised, or when a young man has done a good bit of work in your special branch, be thankful—it is for the common good. Envy, that pain of the soul, as Plato calls it, should never for a moment afflict a man of generous instincts and who has a sane outlook in life. The men of rival schools should deliberately cultivate the acquaintance of each other and encourage their students and the junior teachers to fraternize. If you hear that a young fellow just starting has made mistakes or is a little "off colour," go out of your way to say a good word for him, or for him. It is the only cure; any other treatment only aggravates the malady.

The second great cause is one over which we have direct control. The most widespread, the most pernicious of all vices, equal in its impurity, much more disastrous often than intemperance, because destructive of all mental and moral nobility, as are the others of bodily health, is uncharitableness—the most prevalent of modern sins, peculiarly apt to beset all of us, and the chief enemy to concord in our ranks. Oftentimes it is a thoughtless evil, a sort of tic or trick, an unconscious habit of mind and tongue which gradually takes possession of us. No sooner is a man's name mentioned than something slighting is said of him, or a story is repeated which is to his disadvantage, or the involuntary plight of a brother is ridiculed, or even his character is traduced. In chronic and malign offenders literally "with every word a reputation dies." The work of a school is disparaged, or the character of the work in a laboratory is belittled; or it may be only the faint praise that damns, not the generous meed from a full and thankful heart. We have lost our fine sense of the tragic element in this vice, and of its debasing influence on the character. It is interesting that Christ and the apostles lashed it more unsparingly than any other. Who is there among us who does not require every day to lay to heart that counsel of perfection: "Judge not according to the appearance, but judge righteous judgment." One of the apostles of our profession, Sir Thomas Browne, has a great thought on the question:

"While thou so hotly disclaimest the devil, be not guilty of diabolism.

Fall not into one name with that unclean spirit, nor act his nature who thou so much abhorest; that is, to accuse, calumniate, backbite, whisper, detract, or sinistrously interpret others. Degenerous depravities, and narrow-minded vices! not only below St. Paul's noble Christian, but Aristotle's gentleman. Trust not with some that the Epistle of St. James is apocryphal, and so read with less fear than stabbing truth, that in company with this vice thy religion is in vain. Moses broke the tables without breaking of the law; but where charity is broken the law itself is shattered, which cannot be whole without love, which is the fulfilling of it. Look humbly upon thy virtues; and though thou are rich in some, yet think thyself poor and naked without that crowning grace, which thinketh no evil, which envieth not, which heareth, hopeth, believeth, endureth all things. With these sure graces, while busy tongues are crying out for a drop of cold water, mutes may be in happiness, and sing the Trisagion in heaven."

And the third cause is the wagging tongue of others who are too often ready to tell tales and make trouble between physicians. There is only one safe rule—never listen to a patient who begins with a story about the carelessness and inefficiency of Dr. Blank. Shut him or her up with a snap, knowing full well that the same tale may be told of you a few months later. Fully half of the quarrels of physicians are fomented by the tittle tattle of patients, and the only safeguard is not to listen. Sometimes it is impossible to check the flow of imprecation and slander, and then apply the other rule—perfectly safe, and which may be commended as a good practice—never believe what a patient tells you to the detriment of a brother physician, even though you may think it to be true.

To part from the profession of this country and from this old faculty, which I have learned to love so dearly, is a great wrench, one which I would feel more deeply, were it not for the nearness of England, and for the confidence I feel that I am but going to work in another part of the same vineyard, and were it not for the hope that I shall continue to take interest in your affairs and in the welfare of the medical school to which I owe so much. It may be that in the hurry and bustle of a busy life I have given offense to some—who can avoid it? Unwittingly I may have shot an arrow o'er the house and hurt a brother—if so, I am sorry and I ask his pardon. So far as I can read my heart I leave you in charity. I have striven with none, not, as Walter Savage Landor says, because none was worth the strife, but because I have had a deep conviction of the hatefulness of strife of its uselessness, of its disastrous effects, and a still deeper conviction of the blessings that come with unity, peace and concord. And I would give to each of you, my brothers—you who hear me now, and to you

who may elsewhere read my words—to you who do our greatest work labouring incessantly for small rewards in towns and country places—to you the more favoured ones who have special fields of work—to you teachers and professors and scientific workers—to one and all, throughout the length and breadth of the land—I give a single word as my parting commandant:

"It is not hidden from thee, neither is it far off. It is not in heaven that thou shouldst say, 'Who shall go up for us to heaven, and bring it unto us that we may hear it and do it?' Neither is it beyond the sea that thou shouldst say, 'Who shall go over the sea for us and bring it unto us that we may hear it and do it?' But the word is very nigh unto thee, in the mouth and in thy heart, that thou mayst do it—Charity."

POST-DIPHTHERITIC PARALYSIS—A REPORT ON TWO CASES.

BY

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Case I.—F. B., aged 27.

Personal History:—Patient has always been a healthy man. Three years ago he used alcohol to excess, but has not indulged since. On August 16th, 1904 he developed diphtheria, and was in the Civic Hospital up to September 16th, 1904. He was treated with anti-toxin from the onset. During his stay in the hospital he had paralysis of palate, but only slightly, and had quite recovered when he returned home in September. He then went to work, but, after two days, he noticed that his speech became indistinct, and that he had difficulty in swallowing.

On September 18th, 1904, he called in his physician, who kept him in bed six weeks. His speech and power of swallowing improved greatly. But he began to notice subjective sensations, numbness, and tingling in the hands and feet. When he got up his legs were so weak that he could hardly walk. He thought this was due to remaining in bed, so he went out for a little exercise. When he returned he was much weaker, and could hardly get up stairs. The weakness steadily progressed in the legs. Then the arms became involved, and then the back. At this time—November 25th, 1904—he began to attend the Neurological Out-Door clinic.

Condition on examination:—November 25th, 1904. The gait was distinctly ataxic, the legs being moved as if heavy and limp, somewhat resembling the steppage gait of spastic paraplegia—Rhomberg's sign

was present. He was so weak that he could hardly get up on the table for examination.

Reflexes:—Plantar. Achilles', knee-jerks, and cremasterics, were absent. Abdominal, epigastric and reflexes of upper extremities were present and normal. Pupils were equal and gave reaction to light, but not to accommodation.

Motor Power:—There was marked weakness in flexors of ankles, and extensors of toes; also in the extensors and flexors of the leg and thigh. The right leg throughout was weaker than the left. In the arm the flexors and extensors of forearm were very weak; he could not flex or extend forearm against the resistance of one finger. The dynamometer showed the left grip 32; right 30. The right side was weaker than the left, showing the paralysis to be hemiplegic in character.

Sensation to touch, pain, heat and cold were diminished to a great extent on the soles of the feet; but less so on the dorsum. Sensation in limbs was above the normal. In the upper extremities there was no objective sensory disturbance. Subjectively, there was numbness in the legs from the knee downwards. The hands were also numb, but there was no loss of the steriognostic sense. The sense of position of the toes was lost, and of the limbs uncertain. The sense of position of the fingers was normal.

Electrical examination showed good response in the muscles of the arm, but there was a mild reaction of degeneration present in the legs.

December 20th, 1904. The patient is much improved. From a recumbent position he can rise to a sitting posture without help. The strength of the limbs is greatly improved, and he can go up and down stairs with ease.

The arms and hands are much stronger; dynamometer, right 80, left 110. Objective sensation is normal but there is still numbness in hands and feet. Reflexes, same as before. Electrical examination, the same.

January, 1905.—Condition steadily improving.

February, 1905.—Motor power in limbs about normal. He can easily step up into a chair. There is no Rhomberg sign. Dynamometer, right 90; left 110. Sensation is normal. Reflexes and sense of position of toes normal. There is good faradic response in all the muscles.

Patient was discharged in the 10th week, having made a complete recovery.

Case II.—B. B., aged 30.

Patient had always been a healthy man up to January 3rd, 1905,

when he developed diphtheria. He was treated with anti-toxin from the beginning. The disease lasted one month. For 18 days he was confined to his bed. Food regurgitated on one occasion only. He remained in the house, after leaving his bed for 28 days. After this, as he felt quite well, he resumed work, and continued for three weeks. During this time he began to notice soreness of the throat and difficulty in swallowing. A little later he found that he could not read, although his sight for distant objects was good. Shortly after this he began to experience numbness in his extremities, associated with weakness; and he came to the Neurological Out-door clinic on March 3rd, 1905.

Condition on examination:—Patient walked with a shuffling gait, due to the weakness and incoordination. Rhomberg's sign was well marked. There was marked weakness in extremities, but not so severe as in Case I. Dynamometer showed R. 65; L. 70.

Reflexes:—Plantar absent, knee-jerk (all the others) present. Pupils equal; react to light, but not to accommodation.

Sensation:—In hands and feet diminished, though not lost—otherwise the sensation is normal. Steriognostic sense absent in hands; subjectively feet and hands numb.

Electrical examination showed fair response in muscles of arms, but a slight degeneration in muscle of right leg.

Through March and April his condition gradually improved. The power of accommodation was much better. Legs and arms stronger. Dynamometer, R. 86; L. 90.

In May, strength of limbs was much improved, but right not quite as strong as the left.

Reflexes:— The plantar is still absent. The others are normal.

Faradic irritability in the leg only slightly diminished. In the arm normal.

Sensation:—No objective sensory disturbance. Subjectively, the numbness is confined to soles of feet and to ulnar side of hands. There is now no loss of steriognostic sense.

The patient was discharged May 25th, 1905, having completely recovered.

Before passing on to the treatment let me briefly review these two cases. Each one illustrates the usual onset and progressive character of post-diphtheric paralysis. Beginning with the primary involvement of the palate which, as a rule, does not occur until the disease is over. Generally in the second or third week we see the spreading nature of the poison demonstrated in the loss of power of accommodation. Thence, gradually progressing numbness is felt in the lower extremities, fol-

lowed by weakness and a loss of myotatic irritability was evinced by loss of the knee jerk. Then the upper extremities were affected.

If these cases had been left untreated, the palsy might have still further proceeded, involving the muscles of the trunk and neck, disturbing the heart, and possibly, as in some severe cases, involving the bladder and rectum.

Treatment:—This was given twice a week and lasted for 15-30 minutes. It consisted of galvanism to keep up the tone of the muscles, and later, when the nerves had regenerated, of Faradism. Vibra-massage was also given. This treatment is administered by means of an oscillator, which, in the opinion of many, is an improvement on the Chattanooga vibrator. By this means vibra-massage is administered throughout the entire body, back, abdomen and limbs. The result is a stimulating effect on the circulation, producing a pleasant sense of warmth.

The muscles and nerves are nourished, and peristalsis of the bowels is increased, these helping to avoid the obstinate constipation that is apt to follow in these cases. In general it produces a tonic effect throughout the whole system.

I wish to thank Dr. Shirres for his permission to report these cases.

DIPLO-BACILLARY CONJUNCTIVITIS OF MORAX-AXENFELD.

BY

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AND

S. H. MCKEE.

Clinical Assistant.

For many years we have been confronted with an intractable chronic form of conjunctivitis, which has been in many cases resistant to the more ordinary forms of treatment. Only during the past few years has its pathology and treatment been worked out by Morax and Axenfeld.

This affection of the conjunctiva was first reported by Morax in 1896. He described the clinical picture, and the etiological factor, a diplo-bacillus and stated that with a pure culture of the diplo-bacillus he had been able to set up a typical conjunctivitis.

A clinical report from the Eye Department of the Montreal General Hospital

During the Ophthalmological Congress in Heidelberg in the same year, Axenfeld reported having studied this condition in fifty-one cases which he had seen in Marburg. He also showed preparations of the diplo-bacillus which he had grown on blood serum media. Morax called it "Conjunctivite subaigue." Axenfeld from its chronic qualities "Chronischen Diplobacillen Conjunctivitis." It is known as diplo-bacillary conjunctivitis of Morax-Axenfeld.

Since 1896 the presence of this form of conjunctivitis has been reported from many clinics in different countries, and at the present time it is one of the best known diseases of the conjunctiva in Europe.

In America its presence has been reported in Philadelphia by De Schweinitz and Veasy; in St. Louis by Alt, and in Omaha by Gifford. During the last three weeks its presence has been noted in the Out-patient Department of the Montreal General Hospital. During this time we have seen some eighteen cases there.

With its appearance in Canada a note on the bacteriological cause, clinical picture and the treatment to which it reacts so well may not be out of place.

Case I: Middle aged woman, housewife, who came complaining of her eyes having been "sore" for five days. She never had trouble with her eyes before. The condition was as follows:—Both eyes involved, edges of lids, especially at inner and outer canthi, showed marked reddening (blepharo-conjunctivitis), conjunctival sacs contained small quantity of greyish-yellow discharge, palpebræ and conjunctivæ were very injected, the superficial vessels prominent, while the slight involvement of bulbar conjunctivæ made the contrast marked.

The clinical picture was that of diplo-bacillary conjunctivitis caused by the Morax-Axenfeld diplo-bacillus. Accordingly a smear was made and stained as follows:—

Gentian violet, 25 seconds; washed with water; Gram's iodin solution, 15 seconds; washed with alcohol; washed with water; safranin 5 per cent. solution, 5 seconds; washed with water.

The slide was now examined and found to contain hundreds of square-corned, red-stained diplo-bacilli about 2 μ long and 1 μ wide—the diplo bacilli of Morax-Axenfeld. They were the only bacteria present. The smear preparation was not enough however for diagnosis, so a culture was taken on blood serum media. The best media for diplo-bacillus is blood serum, serum agar, or ascites agar.

Until recently it was held that the diplo-bacillus of Morax-Axenfeld would not grow on glycerine agar, but Axenfeld reports having grown it on this media, while Erdmann reports having grown it to seventeen

generations on glycerine agar. The best medium, and by far the easiest to cultivate it upon is, however, blood serum.

After 24-48 hours in the incubator the surface of the serum shows a number of separate indentations, the surfaces of which are moist; these gradually spread joining one another and increase in depth liquefying the blood serum.

Within a short period we have had seventeen other cases of diplo-bacillary conjunctivitis. They were of varying degree, but all gave the typical picture and bacteriological findings described.

As with Erdmann the cases were mostly grown persons of the poorer class. The cases here have all appeared during a hot spell, a coincidence noted by Gonin and Erdmann. None of the cases complained of headache, as is sometimes the case. All were treated and did well with a solution of sulphate of zinc, one per cent.

The following case is, perhaps, of more than ordinary interest. An elderly man, a farmer, who entered Montreal General Hospital July 2nd, complained that six days previously he had struck his eye with a twig of a tree, but he paid no attention to it at the time. The day following his eye was painful, so he consulted a local physician who treated him five days then sent him to Montreal. His condition upon entry was as follows:—Right eye, central third of cornea deeply ulcerated, edges infiltrated, only part of cornea clear in a small area above. Anterior chamber about half full of pus, iris dull, pupil dilated, conjunctival sac showed profuse greyish discharge.

The ulcer so resembled the serpiginous type due to the pneumococcus, that the usual treatment of cauterizing and the application of antiseptics was proceeded with. Despite this treatment the ulcer continued to spread. Accordingly, after 24 hours a bacteriological examination was made.

Slides were made from pus from the sac, and from the surface of the ulcer; diplo-bacilli in hundreds were found on each slide from the surface of the ulcer and were the only bacilli seen, whilst slides from the conjunctival sac secretion showed cocci, as well, which turned out to be straphylococci pyogenes aureus.

The day following he was put on instillations of zinc. The eye quieted down, and the ulceration healed rapidly under zinc. This case is of interest because of the deep ulceration of the cornea caused by the diplo-bacillus of Morax-Axenfeld.

There has been considerable activity of late in reporting cases of this kind.

Paul has recently reported the cases from the Breslau clinic, Erdmann

from the Marburg clinic, while Petit (8), Peters (9), Phluges (10), Hoffman (11), Sweet (12), Gifford (13), Breete (14), Uhthoff (15), Axenfeld and Zur Needin (16), have all reported cases.

The ulceration of the cornea from diplo-bacillary infection lacks the progressive border so characteristic of pneumococci infective. Diplo-bacillary ulceration is very amenable to zinc therapy.

Shortly then; diplo-bacillary conjunctivitis presents a well marked clinical picture. The diagnosis can be easily verified by means of a smear preparation and culture media.

Without treatment this form of conjuctivitis is exceedingly chronic in its course, with treatment it is a disease of three to six weeks.

One point in connexion with these cases is the marked tendency there is to recurrence, if treatment be desisted from too soon. In a few of the cases the patients disappeared from observation as soon as the more marked symptoms showed signs of amelioration, only with a fresh, severe outbreak shortly afterwards.

In one case we failed to discover any germ when the patient left us, but some bacilli must have remained in the conjunctival sac, as the case returned with a fresh outbreak in ten days after the cessation of treatment. Hence treatment must be persisted in for sometime after the disappearance of symptoms.

The treatment which gives the best results, not only for the conjunctivitis, but also where the cornea is involved, is instillation of zinc sulphate one quarter to one per cent.

Raehlmann holds that the metallic salts break up and act by precipitating the albumen forming albuminates. These agglutinate the enzymes, and active agents of the inflammation, and the freed acid of the salt thereupon exerts its caustic action.

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THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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VOL. XXXIV. SEPTEMBER, 1905. No. 9.

A DANGEROUS PLANT.

Prince Edward Island has put forward many claims to greatness. Now, it appears that "the Island" is the habitat of a plant for which the most extraordinary medicinal efficacy is claimed. According to one authority, "runnings and cancers and tumours in female women" may be cured by its employment. Professor James Fletcher, Dominion Botanist, however, is not so enthusiastic; but a lack of enthusiasm is the bane of scientific men. According to Professor Fletcher the plant is *Daphne Mezereum,* as described in Barton and Castle's British "Flora Medica," 1877.

In the *Maritime Medical News* for July, a report upon the plant, by Professor Fletcher, is published over the signature of Dr. MacNeil, of Charlottetown, who had sent specimens to Ottawa for examination.

Every part of the plant is powerfully acrid and caustic. Two or three flowers, chewed, have merely an herbaceous flavour at first, but in a short time, the tip of the tongue is affected with an acrid burning

taste, combined with a degree of numbness like that produced by aconite; this sensation soon extends to the throat and fauces, and continues for several hours, although not a particle of the substance be swallowed. Drs. Munro and Russel were the first to introduce the *Mezereum* bark into practice as a stimulant diaphoretic, useful in venereal nodes from thickening of the periosteum. Other writers have also recommended it in similar diseases, and a decoction has been frequently administered in rheumatic, scrofulous, and cutaneous affections.

Dr. Withering records having used the root successfully in a case of difficulty of swallowing occasioned by paralysis. After chewing a thin slice as often as could be borne, the patient in about a month recovered the power of swallowing, although the case was of three years standing.

An ointment made of berries is employed in the north of Europe against foul ulcers, chancres and cancer. On this continent the bark is employed as a vesicant. It is also applied to the head, to relieve deafness, headache, toothache and some affections of the eyes; and has been recommended in coxalgia, chronic rheumatism, and various skin diseases. A crystallizable principle called *daphnia* has been found in the plant.

We would be the last in the world to question the validity of this claim to greatness, but cannot refrain from saying, on the high authority of Linnaeus, that "six of these berries will kill a wolf." That eminent botanist also asserts that he saw a girl die of excessive vomiting and hemoptysis in consequence of taking twelve of them to check an ague.

Nor do we undertake to set ourselves in opposition to popular belief; yet we may mention, on the authority of *Pharmacographia,* page 487, that, in English medicine the plant is never given, except as an ingredient of the compound decoction of sarsaparilla, and an ethereal extract of the bark was introduced in 1867 as an ingredient of a stimulating liniment.

NATIONAL QUARANTINE.

A journal in a city like Montreal is bound to be more or less local in its character. We do not undertake to deal with all subjects, or to speak with equal authority upon each. An epidemic of yellow fever in Canada would be proper subject for enquiry and comment; but when it occurs in the United States, we feel free to leave it to those who have better information. Certainly, from reading the current medical journals which issue from the United States, it would appear that the opportunity is not being missed.

The fact which is of importance to outside persons is that the system

of State regulation of Quarantine has broken down. It is worth a little epidemic of yellow fever, if it will induce the citizens of the States to surrender the care of the public health to one central authority.

In times gone by, it did not matter whether state or nation managed health affairs, since anything which either might do was not likely to be of much importance. The work of the physicians who laboured so heroically, and uselessly, was a pitiful sacrifice; but now that there are sure grounds of procedure, much can be done, and it can be done best by those who know what to do, by doing it all the time.

The people and Governor of Louisiana have asked President Roosevelt to put the United States Marine Hospital Service in charge of the situation; and as soon as the care of the epidemic was put in the hands of Surgeon-General Wyman, public confidence revived. Men like J. H. White and J. M. Guiteras, who have had experience in Cuba are likely to be more competent than the health officers of small towns on the Gulf of Mexico. There is a strong tendency in the United States to surrender the right of local government to those who can do it better. The doctrinaires are giving way to the men of common sense, and the facts in the present epidemic form a strong argument for the control of all quarantine stations by the United States Government.

The more ignorant amongst the public affect to believe that the appearance of yellow fever outside of the habitat of the *Stegomyia* throws doubt upon the correctness of the theory that the disease is propagated by mosquitos. Upon this subject the *Medical Record* says: The truth of the theory, it is generally believed by the medical world, was demonstrated experimentally and practically in Havana; and, in the face of the mighty sanitary revolution there effected, objections based upon the unexplained facts of old time epidemics in Philadelphia and other Northern cities, where the *Stegomyia* mosquito does not habitually flourish, have but little force. It is more reasonable to explain these epidemics on the supposition of an importation of the fever-bearing insect than it is to explain the fact of Havana's riddance on any but the mosquito theory.

THE APOTHEOSIS OF ADVERTISING.

We have been favoured by Dr. William Henry Drummond with a copy of an advertisement which he picked up at the railway station in Joliette. If it came from any other quarter there might be some doubt as to its authenticity. Coming from the author of "The Habitant," all doubts are set at rest. As a rule we do not publish all

the advertising matter which is sent to us; but we think it worth while giving further publicity to this document.

"The Woman's Health":—Is a vegetable preparation which guaranties to cure all diseases of the womb, with the exception of "fall" for which, I have another preparation. But this one cures, as by anchantement all others troubles, as that ball which rises in the stomach, who suffocates and which very often makes you believe that you are to get dyspepsia, because that gives you some winds, risings, etc.

Here I speak to you as a friend. Do not doubt my preparation because you shall be surprised with the quickness of your cure. You shall not have taken it two or three days, or more, that you shall feel a great release.

I have said this one cures the winds, risings, and backsore, the kidney's disease and all twitches of the abdomen, sore of the hips and groins, and thighs, and takes off the black thoughts, such as the discouragement carelessness to fulfill the duties of one's own condition, and generally regulates your months in time and without pain.

All those troubles are more or less cure in one or three months of time, or more, sometimes very much less, but sometimes little more of course, according to case and treatment if well followed. For the "falls," what we call heaviness in the lower part of the body, and who, more or less can make some inconvenience in walking, and suppress the urines. This one can be cured in 20 days entirely.

If you follow this prescription: Warm one of my plaster and put it under the nevol, and apply a good belt of cotton, not too close, and go to bed lieing on the back, the left leg over the right leg, as much as possible, and changing the right leg over the left leg, and that position during 9 days or more, and getting up only for make the necessities, and be careful not to catch cold, and care in rising not to make any effort. To do not eat, but only light food. Get up after the tenth days only one hour, less or more, taking care not to become tired. In getting up if you feel very weak, if your head turns, go to bed a few minutes more, that can occur once on 25 cases. Because some persons are more or less very strong. Walk very little for a few days and do not work during ten or twelve days, and let the plaster falls, by himself, and take your preparations during a month at least. Then you shall be cure without operation and at your home. And be careful not to rock. Prepare by L. D. Dupuis, Joliette, P.Q."

IMPERIAL REGISTRATION.

General Laurie's Bill to amend the Medical Act of 1886 has passed the House of Commons of Great Britain. This amendment states that

where any part of a British possession is under a central and also a local legislature His Majesty may, by Order-in-Council, declare that the part which is under the local legislature shall be deemed a separate British possession.

Under the present arrangements a graduate of a Canadian university wishing to practise in Great Britain, or enter the Imperial service, must first pass the examination of the General Council of Medical Education in primary and secondary subjects. If now the provinces decide to avail themselves of the provisions of General Laurie's Bill, a reciprocal arrangement might be entered into by which the passing of the provincial examination would be sufficient to allow a Canadian graduate to enter the army or navy or to practise in Great Britain.

The provisions fall short of those in Dr. Roddick's Dominion Registration Act in this respect, that a person so qualified would not necessarily be permitted to practise in every province in Canada or in the other British dominions.

This is a considerable advance towards unification of the profession, and it now rests with each province to avail itself of the provisions which are offered.

THE FIRST AUTOPSY IN MONTREAL.

In the description in "Hakluyt's Voyages" of the travels of Jacques Cartier, is found the following, which describes the earliest reported autopsy performed in this city. It took place in 1535, when the winter was passed in Hochelaga and many of the crew died of an epidemic disease.

"That day Philip Rougement, borne in Ambroise, died, being 22 yeeres olde, and because the sicknesse was to us unknowen, our Captaine caused him to be ripped to see if by any means possible we might know what it was, and so seeke meanes to save and preserve the rest of the company: He was found to have his heart white, but rotten, and more than a quart of red water about it; his liver was indifferent faire, but his lungs blacke and mortified, his blood was altogither shrunke about the heart, so that when he was opened great quantitie of rotten blood issued out from about his heart; his milt (spleen, Ed.) toward the back was somewhat perished, rough as if it had bene rubbed against a stone. Moreover, because one of his thighs was very blacke without, it was opened, but within it was whole and sound, that done, as well as we could, he was buried."

At the celebration of the fourth centenary of the Royal College of Surgeons held in Edinburgh, July 21st, 1905, honorary fellowship was

conferred upon Dr. F. J. Shepherd, professor of anatomy, McGill University. Other recipients of the honour included Baron Von Eiselburg, Vienna; Professor Ernst Fuchs, Vienna; Professor Sylvester Saxtorph, Copenhagen; Professor Guyon, Paris; Dr. Lucas Championnière, Paris; Professor Poncet, Lyons; Dr. Paul Segond, Paris; Professor L. F. Terrier, Paris; Professor Von Bergmann, Berlin; Professor Bier, Bona; Professor Vincenz Czerny, Heidelberg; Professor Franz Konig, Jena; Baron Saneyeshi, Japan; Professor Halstead, Baltimore; Baron Lister, London; Dr. Alex. McCormick, Australia; Professor McBurney, New York; Dr. J. H. Cameron, Toronto. All who know Dr. Shepherd and his work will agree that these distinguished persons were in very good company on that memorable day.

Surely the editors of medical journals have troubles enough without quarrelling among themselves. The A. R. Elliott Company, which publishes the *New York Medical Journal* has "taken the law of" the *California State Journal of Medicine* over a question of the improper use of the editorial page for advertising purposes. Certainly, the western journal spoke its mind freely, and the "lawyer's letter" which it received was an awful one. But peace has come. Medical journals should study to be quiet.

In the *Johns Hopkins Hospital Bulletin,* Vol. XVI., No. 168, p. 102, Dr. Kelly, in discussing a paper by H. I. Wiel, gives in detail the procedure which he has found useful in the vaginal examination of children. He says that "children rapidly become accustomed to the method and readily submit." We quite agree with Dr. Kelly that "there is very little upon the subject in the literature," and trust that this condition of meagreness will continue to exist.

This month the JOURNAL is freed from the burden of Society Proceedings, which has been so cheerfully borne whilst the meetings were in session. We are therefore able to print Dr. Lockhart's voluminous paper on Chorion-Epitheliomia, which is likely to be of authority for a long time to come. Under arrangement with the Journal of the American Medical Association we are also enabled to publish Dr. Osler's farewell address upon "Peace, Unity and Concord."

The British Medical Association will meet in Toronto in 1906. There are in Montreal many persons yet living who acquired some experience during the meeting which was held here in 1897; and the committee of arrangements might learn of us. We make this sugges-

tion with proper humility, as knowing our place, when we lift up our eyes to that great city.

At a recent meeting of the Board of Trustees of the Toronto Free Hospital for Consumptives the most important matter under consideration was the proposition to add to the present hospital, near Weston, by the erection of the new building giving improved accommodation for medical, nursing and domestic staff, and a new and commodious dining-room and kitchen. The trustees decided to proceed with the work.

Scarcely a number of a medical journal reaches us which does not contain an account of the awakening of the public mind to the necessity of combatting the ravages of tuberculosis. In Louisville an association of 200 members has been established to operate through the whole State of Kentucky.

The *Kentucky Medical Journal* points out a real difficulty in connexion with central examining bodies. In colleges, clinical and laboratory instruction is rapidly replacing the old method of didactic lectures, whilst the old methods of examination continue to exist. Obviously, the better trained graduate is at a disadvantage, if his examination is of a purely theoretical nature.

The seventh session of the Australasian Medical Congress will be held in Adelaide, September 4th to 9th, 1905. According to an announcement which is contained in the excellent *Australasian Medical Gazette* the work of the Congress will be conducted in seven sections under the presidency of Professor E. C. Stirling.

Reviews and Notices of Books.

ADDRESSES AND OTHER PAPERS. By WILLIAM WILLIAMS KEEN, M.D., LL.D., F.R.C.S. (Oxon.), Professor of Surgery, Jefferson Medical College, Philadelphia. W. B. Saunders & Co., Philadelphia, 1905; J. A. Carveth & Co., Toronto.

Professor Keen has been known these forty years as one of the first surgeons in America; and he has richly deserved that place by reason of his skill and industry, and his humane character. When he makes an incursion into literature—that is another matter.

These addresses and papers cover a wide range of thought, and were given at various times these thirty years past, published in popular magazines, in scientific journals, or delivered before associations and collegiate bodies.

As a record of facts, either observed, or acquired; as a body of opinion pertaining to surgical questions, this book has the value which Dr. Keen's great name gives it. For example, the shocking condition of the Army Medical Service in the War of the Secession is clearly revealed. The Assistant Surgeon of the Fifth Massachusetts regiment had graduated in 1861, and received his appointment immediately. Fortunately, he remained at his post only two months. He was replaced by Dr. Keen, whose experience as a surgeon had been acquired during one session at a medical school. Dr. Keen himself "graduated" the following year. "It is quite true that you know very little, but you know more than your predecessor," were the encouraging words which Dr. Brinton addressed to this modest surgeon of six months' experience who was to be entrusted with men's lives. The historical papers, then, have a value; but it is as a work of literature such a book must be considered.

The book, it appears, has been published, "in response to numerous requests." It is an excess of good nature on the part of an author to yield to such requests. It is his reputation which is at stake, not his friends', who are usually so free with their advice. In the present case they appear to have advised without sufficient information, or to have exercised singularly poor judgment. Dr. Keen is also ill-served by those who are responsible for the introduction of the pictorial frontispiece. "The fœtal skeleton, playing left-handed with an injected artery, as a bow, upon a sequestrum as a violin," in spite of its "pathetic pose," is in singularly bad taste. It is little better than those jokes which Freshmen find amusing, though it was drawn in the year 1703. These poor remnants of mortality are not fit subject matter for humour. Dr. Osler touches these old subjects with grace, for he knows that a thing may be old, and at the same time be obscene and revolting. The caricature of the Resurrection on page 3 is offensive to any sensible person. Dr. Keen may not be responsible for these abberations from good taste. He is responsible for the unctuous goodness of his "Cheerfulness of Death." "There," he says, "we shall see, and know intimately, our Lord Jesus Christ." It may be so, we hope it is; but we should like to have the statement made with less assurance, until we have better information than is contained in this revelation. Dr. Keen employs words without a perception of their meaning, and helps to propagate what may turn out after all to be a disappointing illusion.

These addresses as a whole do not rise above the level of those addresses which are delivered upon similar occasions. They contain many sentiments which are entirely creditable and proper; but the expression is without that quality of literary grace, or sagacity, which can lift any

battered out subject above the commonplace. As homilies they are excellent; but we have heard them before. One example will serve to illustrate their banality: "The flavour of stale tobacco-smoke about his beard and clothes will never characterize the ideal physician." Such gems of thought are profusely scattered throughout the work. The thing is true; but is not necessary to say it, especially in a book which it is intended to sell for three dollars and seventy-five cents.

American Edition of Nothnagel's Practice; Malaria, Influenza and Dengue. By Dr. Julius Mannaberg, Professor of Internal Medicine, University of Vienna; Dr. O. Leichtenstern, formerly of the University of Cologne. Edited, with additions, by Major Ronald Ross, F.R.C.S., F.R.S., C.B., Professor of Tropical Medicine, University of Liverpool; J. W. W. Stephens, M.D., D.P.H.; Walter Myers, Lecturer in Tropical Medicine, University of Liverpool, and Albert S. Grunbaum, M.D., F.R.C.P., Professor of Experimental Medicine, University of Liverpool. Authorized translation from the German, under the editorial supervision of Alfred Stengel, M.D., Professor of Clinical Medicine, in the University of Pennsylvania. Philadelphia and London; W. B. Saunders & Co., 1905. Canadian Agents, J. A. Carveth & Co., Limited, 434 Yonge Street, Toronto.

The title of this book does not express the relative importance of its parts, for, in a volume of 770 pages, 517 are taken up by malaria, and 70 by dengue. The monograph on malaria, as written by Mannaberg, is as different as possible from what the same article would be if written to-day by Stephens, and this is an advantage, for the reader gets the benefit of the point of view of two men who look at the subject from widely differing sides; the American edition is a much more valuable work of reference than is the original monograph. The present editor has added a hundred pages upon the mosquito and its relation to the disease, and this large space is closely packed with information relative to the zoology and anatomy of the mosquito, as well as with technical directions as to the procedures adopted in the study of the mosquito and the carriage of malaria. It is commendable that the author is very straightforward and terse with regard to stains and methods of examination, and these are not multiplied indefinitely, but the author gives what he considers the best ones. The geographical distribution makes interesting material, and the shaded maps are very useful for its graphic representation; the symptomatology and classification are followed by a chapter on perniciousness, in which the editors have been compelled by circumstances to preserve the use of those terms

that are sanctioned by use, though they are not free from objection; such are typhoid pernicious malaria, syncopal pernicious, diaphoretic pernicious, pneumonic subcontinued, and so on. Complications and sequelæ form a useful terse chapter, and treatment is definite and clear cut. One confesses to liking the editorial addenda better even than the original material, but this is so of necessity, because so much that is essential to the understanding of the disease is contained in the research of recent date; but, while saying this, one is compelled to admit that the combination of the old and the new makes a far more useful treatise than would the whole work written by either the original author or the editors.

Leichtenstern's monograph on Influenza has been edited by Grünbaum, who points out in the preface that the author, by the irony of fate, died from pneumonia following influenza.

The part that deals with Influenza takes up 200 pages, and the editor's task seems to have been comparatively light, so far as additions are concerned. A paragraph on differential diagnosis we find has been added, but a list of literature, 16 pages long, which is by no means exhaustive, indicates how serious has been the work of consultation. The opening chapter on the history, epidemiology and etiology of the disease is entertaining, apart from its scientific value. Sixteen outbreaks of tremendous distribution have occurred since 1510. The plate illustrating the influenza bacillus is, unfortunately, not a very good one, but the bacillus is so small that a distinct photo-micrograph is difficult to obtain.

Dengue is briefly dealt with, the editor giving his opinion in favour of the parasite described by Graham, as the active agent in its production.

HALL'S PHYSIOLOGY; A Text-Book of Physiology, Normal and Pathological. For students and practitioners of medicine. By WINFIELD S. HALL., Ph.D., M.D. (Leipzig), Professor of Physiology, Northwestern University Medical School, Chicago; Member of the American Association for the Advancement of Science, etc., etc. New (2nd) edition, revised and enlarged. In one octavo volume of 795 pages, with 39 engravings and three full-page coloured plates. Cloth, $4.00, net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1905.

This book tempts one to lay aside the strictly judicial role of the reviewer and to indulge in a little enthusiasm. It covers a wide field and contains a great deal that is not found in other text-books of physiology. Like the first edition the present one contains far more ana-

tomical, physical, chemical and even mathematical matter than one expects to see. This second edition also contains a number of sections dealing with what the author somewhat inelegantly calls "pathologic physiology." For these sections he has called upon a number of his colleagues engaged in clinical and pathological work for assistance. The subjects taken up include the principal diseases of the blood and of the circulatory, respiratory and digestive systems, the disorders of metabolism and excretion, and to a slight extent, affections of the nervous system. These sections being contributed by different writers vary in excellence, but on the whole they give a presentation of applied physiology such as cannot easily be found elsewhere under a single cover.

At first we were inclined to doubt the necessity of pointing out clinical applications to primary students, but we have become satisfied that, as carried out in this book, the idea is a good one. It adds interest to the study of physiology for the junior student and makes the book far more available for the advanced student who desires to read up the physiological aspect of his hospital cases.

To practitioners these sections will be equally acceptable in bringing before them a large amount of useful physiological knowledge which has come to light since their undergraduate days, and with much of which they are unfamiliar.

A serious difficulty in the way of its adoption as a college text-book is that it adopts a nomenclature and classification of the chemical constituents of the animal body which is often at variance with that taught in this country.

In the case of proteids for instance, the Cohenheim-Hammerston classification is adopted, which gives new meanings to old terms and tends to produce great confusion in the minds of students. The worst of it is that the author does not even carry this classification consistently throughout his own book, but sometimes uses terms with their older significance which must make confusion run riot in the student's mind indeed. In matters of detail we find that the book contains sufficient inaccuracies and omissions to shut it out from the very first place among students' text-books.

On page 140 fibrin is given instead of fibrinogen, as a constituent of plasma. On page 174 an unusual and, as it seems to us, a ridiculous explanation is given of the predicrotic pulse wave. As in the first edition no mention is made of the part played by the mitral and tricuspid valves in the first sound of the heart. We can find no mention of secretin in connexion with the secretion of pancreatic juice.

This book is probably the best a practitioner could buy from which

to brush up his physiology, because he will find it a convenience to have the necessary anatomy, chemistry and physics all to hand in the one volume, and he should appreciate the clinical applications.

For the student, on the other hand, we think there are better books, but not many. We refuse first place to this as a student's text-book because we find some carelessness as to detail, and because we consider the confusion in the classification of proteids a very serious drawback.

W. S. M.

A Manual of Midwifery; for Students and Practitioners. By Henry Jellett, B.A., M.D. (Dub. Univ.), F.R.C.P.I., L.M.; with the assistance in special subjects of W. R. Dawson, M.D., F.R.C.P.I.; H. C. Drury, M.D., F.R.C.P.I.; T. G. Moorhead, M.D.; R. J. Rowlette, M.D. With 9 plates and 467 illustrations in the text. University series. London: Ballière, Tindall and Cox, 1905. New York; Wm. Wood & Co.

This is, on the whole, the best manual of obstetrics for students and practitioners which has appeared for many years. It is up-to-date, and, at the same time practical and sound. The author was assistant master at the Rotunda Hospital, and his collaborators are all Dublin men of prominence. The book, consequently, is a good exposition of the views and practices of the Dublin School of Obstetrics at the present time. Dr. Moorhead contributes the chapters on Embryology and Anatomy, the Phenomena of Pregnancy and the Anatomy of Contracted Pelvis; Dr. Drury, those on Organic and Functional Diseases in Pregnancy; Dr. Rowlette, on the Etiology and Pathology of the Surgical Fevers; Dr. Dawson, on the Insanities of Reproduction. The illustrations are excellent, many being original, utilizing valuable specimens in the Museums of Trinity College, Dublin, and the Royal College of Surgeons, Ireland; others have been reproduced from the works of Bumm of Halle, Williams of Baltimore, Webster of Chicago, and the late Milne-Murray of Edinburgh. The arrangement of the book is convenient, the style is concise, the directions clear and practical. The writer has his own convictions based on experience, and he does not hesitate to express them. This is just the kind of book which is helpful as a manual, but which, unfortunately, has gone out of fashion to a great extent. Authors nowadays strive to pile up references to foreign literature, German especially, to make their articles encyclopædic and complete, to give everyone's views and describe everyone's treatment; but they forget to sum up, to give their own deductions, and the practice they themselves would use or would recommend to others. Among the multitude of advisors, and the mass of conflicting opinions and con-

tradictory methods, the student is left in a state of hopelessness and helplessness which is truly pitiful.

The chapters on the pathology of labour, pregnancy, and the puerperium are very good, full use being made of the excellent bacteriological work done by Williams and Little in this important field. Obstetrical operations are treated clearly, and from the point of view of the student and young practitioner, rather than of the expert. Here and there are little points in practice which seem strange to us on this side of the water, such as, for example, the giving of the vaginal douche in the *lateral* rather than in the *dorsal* position, and the use of Ferguson's glass speculum to obtain a view of the os, in making a diagnosis of parity or multiparity (Figs. 139, 140). But these are small matters; and, after all, they serve to show us that there are many ways of doing the same thing, and that other methods may yield excellent results, even though they may widely differ from those which we are wont to employ. The book is thoroughly practical and sound, and can be recommended as a good hand-book for students, and a safe guide for practitioners.

A Practical Treatise on Sexual Disorders in the Male and Female. By Robert W. Taylor, A.M., M.D., Clinical Professor of Genito-Urinary and Venereal Diseases in the College of Physicians and Surgeons (Columbia University), New York. New (3rd) edition, enlarged and thoroughly revised. In one octavo volume of 575 pages, with 130 engravings and 16 coloured plates. Cloth, $3.00, net. Lea Brothers & Co., Philadelphia and New York, 1905.

After forty years of labour this Journal has acquired a considerable *Musée d'Obscénités*. This book of Dr. Taylor's has been placed on the shelf labeled "duplicates." Vice is an evil sisterhood, and lechery and lying go hand in hand. The degenerate individuals who have occasion to seek the services of surgeons practising Dr. Taylor's specialty come to confess, and frequently end up by boasting. These vapourings are duly entered in a case-book, and when a sufficient amount is accumulated, they are published. That is the genesis of most of the productions which defile a reviewer's table. Dr. Taylor's collection of "case reports" does more credit to his erudition and industry, than to his good sense or taste. That excellent jester, Egerton Y. Davis, is again quoted as a sober reciter of scientific truth. For twenty years this humourist has ranged through erotic literature; indeed, ever since his now memorable contribution upon "Cohæsione in Coitu" was offered to this Journal—and declined. Dr. Taylor reproduces in all solemnity on page 406, this piece of subtle satire, which is directed against just

such writers. Dr. Taylor should verify his "reports," and, if he were to address a communication to Egerton Y. Davis, 1 West Franklin Street, Baltimore, with the superscription, "to be forwarded to the Regius Professor of Medicine, Oxford, England," we feel sure that he would receive information which would minister to his amusement.

A Practical Treatise on Fractures and Dislocation. By Louis A. Stimson, B.A., M.D., LL.D. (Yale), Professor of Surgery in Cornell University Medical College, New York. Fourth Edition revised and enlarged. 331 Illustrations and 46 Plates in Monotint. Lea Brothers & Co., New York and Philadelphia.

To those familiar with the previous edition of this work commendation of the present is unnecessary. The work is of a high character. The addition of twenty X-ray photographs in 16 plates has made more clear some points about fracture, that have always been obscure. Colles's fracture, in which every one is interested is thoroughly illustrated and the essentials in the successful treatment emphasized.

In speaking of fracture of the neck of the femur, the old classification is pretty much put aside and the author thinks that the prognosis depends not upon impaction nor upon the situation of the fracture, but upon the preservation of the vascular supply furnished by the vessels which approach the bone near the insertion of the capsule and run to the head in the thick periosteum of the neck. Most surgeons are very careful not to break up an impaction of the neck of the femur—and now a forceful additional reason for the utmost gentleness in manipulation is the danger of destroying the blood supply of the detached femoral head. Special mention should be made of the chapter on fracture of the lower end of the humerus and injuries to the elbow in children. The book is a standard and is one to be highly recommended.

International Clinics. Edited by A. O. J. Kelly, M.D., Vol. II. Fifteenth Series, 1905. Philadelphia and London. J. B. Lippincott Company. $2.00.

This is a volume of 310 pages. It contains 23 separate articles, 14 plates and 18 figures. The articles are not strictly bedside lectures, as the term "clinic" implies—unless to the word κλίνη be given its additional significance, that on which one lies, a bier; and, by analogy, a *post-mortem* table. Many of the papers savour of the lamp; and others of the laboratory. They differ in value. The clinic by Solis-Cohen on Uræmic Psychoses is entirely suitable for students, and the employment of the Socratic method of question and answer lends it lightness. The discussion of sea-sickness by Dr. Benedict is trivial,

though the speaker makes a judicious use of the humour inherent in this malady. The sections of Physiology by Hemmeter, and Pathology by Josef Weisel are admirable. The French clinics are masterly. The whole book is full of interest, of one kind or another.

THE SURGICAL ASSISTANT; A manual for students, practitioners, hospital internes and nurses. By WALTER M. BRICKNER, B.S., M.D. New York. International Journal of Surgery Co., 100 William Street, New York. Price, $2.00.

The author deals with a lot of questions not often considered in books, frequently discussed by medical men, both young and old, that are of interest and importance, and the right understanding of which contributes greatly to maintain the friendly feeling that should always obtain between medical men and their assistants and nurses. Not only the conduct of the assistant and his relations with the surgeon and the patient, but the hospital interne, the preparations for an operation, the preparation of the room, the anæsthetist, the choice of the anæsthetic, but a lot of useful directions and details concerning major and minor operations are considered in the different chapters devoted to these subjects. It is a suggestive and useful book.

A HANDBOOK OF INTESTINAL SURGERY. By LEONARD A. BIDWELL, F.R.C.S. London, Baillière, Tindall and Cox, 1905. Canadian Agents, J. A. Carveth & Co., Ltd., Toronto. Chandler, Massey & Co., Toronto, Montreal and Winnipeg. Size, demy 8vo. Price, six shillings net.

This little volume aims at giving such a precise description of the commoner intestinal suture that an inexperienced surgeon may readily practise the various methods on dead intestines before performing an anastomosis on the living subject. The illustrations are numerous and excellent. The text is clear. The different operations on the stomach and intestines are most lucidly described. It is a valuable book for students and beginners.

PROGRESSIVE MEDICINE. Edited by HOBART AMORY HARE, M.D., H. R. M. LANDIS. June 18th, 1905. Messrs. Lea Brothers & Co.

The contents of this volume are Hernia, by William B. Cooley, M.D.; Surgery of the Abdomen, by Edward Milton Foote, M.D.; Gynæcology, by John G. Clarke, M.D.; Diseases of the Blood and Glands, by Alfred Stengel, M.D.; and Ophthalmology, by Edward Jackson, M.D. An index completes a volume of nearly 350 pages. This quarterly digest will appeal to Canadian practitioners by reason of the excellent survey

of the foreign field of medicine. There is no mention of any work which has been done in Canada. To that extent the record is imperfect.

SAUNDERS' POCKET MEDICAL FORMULARY. By WILLIAM M. POWELL, M.D. Containing 1,831 formulas from the best known authorities. Seventh Edition, revised. Flexible Morocco. $1.75 net. Canadian Agents: J. A. Carveth & Co., Toronto.

In this new seventh edition there have been added over 460 new and valuable formulas, selected from the works and private practices of the best authorities. The editor has eliminated many obselete formulas, inserting in their place newer and better ones, embodying a large number of approved new remedies. A book of this kind is a daily necessity to physicians, young or old.

The National Standard Dispensatory, by Hare, Caspari and Rusby, will be ready for sale September 1st, the date when the new United States Pharmacopœia goes into effect. By authority of the Convention it will contain every article in the Pharmacopœia, as well as the explanations and instructions necessary to understand and apply the brief statements to which the official guide is restricted. The authors, Dr. H. A. Hare, of Philadelphia; Prof. Charles Caspari, Jr., of Baltimore; and Prof. H. H. Rusby, or New York, all men of eminence in their respective fields, and members of the Revision Committee of the Pharmacopœia.

Medical News.

MORTALITY IN MONTREAL.

Dr. Laberge, Medical Health Officer, has prepared a statement of the deaths from tuberculosis in Montreal during the past five years. His statement shows that there were 62 fewer deaths from tuberculosis of all descriptions in 1904 than in 1903, and that in 1904 the deaths from pulmonary tuberculosis were only 1.94 per thousand of the city's population. This is a lower rate than in any of the preceding four years. Owing to the fact that statistics for pulmonary tuberculosis alone were kept in 1900, 1901, and 1902, the percentage of deaths from tuberculosis of all forms was not obtainable during those years. There were 755 deaths from tuberculosis in 1904, while the preceding year showed 817.

The death rate from all causes was also lower in 1904 than in 1903, being 23.39 per one thousand of population, as against 24.29 for the preceding year. The total number of deaths was 6,895 last year.

BRITISH COLUMBIA MEDICAL ASSOCIATION.

The annual meeting of the British Columbia Medical Association was held in Vancouver, on the 18th and 19th July, 1905, under the presidency of Dr. W. D. Brydone-Jack. The following is the programme which was adhered to:—

On Infection and Immunity, by Dr. J. C. Eagan; An Unusual Case of Intestinal Obstruction, by Dr. R. E. McKechnie; Clinical Reports with Exhibition of Cases, by Dr. Glen Campbell; On Septic Tanks (illustrated), by Col. T. H. Tracy, M.C. Soc. C.E.; Vancouver Hospital (illustrated), by G. W. Grant, Architect; Cases of Bilharzia Hæmatobia in British Columbia, by Dr. R. E. Walker; Observations on Tuberculosis in New Zealand, by Dr. William Stephen.

ROYAL VICTORIA HOSPITAL.

Report for July, 1905:—Patients admitted, 262; patients discharged, 263; patients died, 16. Medical, 92; surgical, 108; ophthalmological, 16; gynæcological, 32; laryngological, 14; total, 262. Out-Door Department:—Medical, 718; surgical, 316; ophthalmological, 294; gynæcological, 129; laryngological, 302; total, 1,759. Ambulance calls, 74.

The International Congress of Tuberculosis will assemble in Paris, on 2nd October, and will continue till 7th October. It will be under the patronage of Mr. Loubet, President of the Republic. The Congress will be divided into sections as follows:—Medical Pathology, President, Prof. Bouchard; Surgical Pathology, President, Prof. Lannelongue; Preservation and Assistance of Infancy, President, Prof. Grancher; Preservation and Assistance of Adults, Presidents, Prof. L. Landouzy and Paul Strauss.

The Prince Edward Island Medical Association has appointed the following officers: President, Dr. McLaughlin; Vice-Presidents, Drs. Coffin, Douglas and McLennan; Secretary, Dr. Johnson; Treasurer, Dr. Conroy. The Council is as follows:—Dr. Taylor, Dr. Conroy, Dr. S. R. Jenkins, Dr. H. D. Johnson, Dr. McLaughlan, Dr. Murchison. The Council met afterwards and elected Dr. Conroy as President, and Dr. Jenkins, Registrar-Secretary.

The Board of Trustees of the Woodstock Hospital have received the legacy of $20,000 bequeathed to them by the late Hon. James Sutherland.

Retrospect of Current Literature.

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

ROYAL WHITMAN, M.D. "Fracture of the Neck of the Femur." *American Journal of Medical Sciences*, July, 1905.

Until quite recently the prognosis in this fracture was far from bright, and even at the present time many practitioners regard shortening, deformity, limitation of movement, pain and swelling inevitable. The advance in the treatment and consequent improvement in results are due to a very large degree to the writer's work on this fracture, and we welcome this further contribution. He takes the ground that this fracture is a neglected subject, and suggests that this injury would be far less disastrous in its results if the following conclusions were generally accepted. Fracture of the neck of the femur occurs at any age, even in childhood. That there are two distinct forms of fracture of the upper extremity of the femur in young subjects, true fracture in which the neck is depressed as a whole, and partial epiphyseal-disjunction in which the injury involves its articulating extremity and that the recognition and distinguishing of these forms hold great importance in influencing treatment. An injury to the hip, followed by persistent disability, should always suggest fracture, and if one is not expert in the details of physical examination, an X-ray picture should be procured if possible. As an impacted fracture must of itself cause disability, one should attempt to reduce it in the manner that has been described, provided efficient support can be assured. The first essential in the treatment of complete fracture is to appose the fragments. For this purpose direct traction under anæsthesia, followed by fixation in the attitude of abduction seems to present certain advantages over the methods usually employed. If union has not followed routine treatment, the open method is indicated in suitable cases. The standard of success in treatment of the most favourable cases should be restoration of normal function, and in all one should at least attempt to apply the principles that are recognized as essential to success in the treatment of fractures in other situations. Anatomical investigations bearing on the writer's method of treatment were made by Alfred S. Taylor, M.D., and are of great importance in showing the mechanical measures to be adopted in reducing the fracture. Before dissection the limit of abduction varied from 45 to 55 degrees from the median lines. When the neck of the femur was divided the outer fragment underwent a posterior displacement combined with external rotation. In the cadaver there was no upward displacement such as occurs in the living. Abduction to

45 degrees, combined with lifting forward of the outer fragment produced and maintained good apposition of the fragments and gave the proper relation between the axis of the neck and that of the shaft of the femur. Abduction beyond 45 degrees caused separation of the fragments at the inferior border of the neck. Abduction was limited by the inferior ligaments and capsule, and by impact of the posterior part of the great trochanter upon the soft tissues just above the acitabulum and held firm, regardless of the level at which the neck was divided. The outer fragment of the neck caught under the rim of the acitabulum and cotyloid ligament only when the line of division was close to the head of the femur. Tension of the inferior capsule and its ligaments during abduction tended to cause spontaneous alignment of the fragments; this influence being more marked as the line of division of the neck approached the great trochanter. A slight amount of rotatory manipulation, combined with some lifting forward of the distal fragment, gave best opposition. Division of the capsule and ligaments inferiorly rendered reduction more difficult as there was a tendency to upward displacement of the distal fragment during abduction, and the usual spontaneous limitation of abduction was largely absent.

William B. Coley, M.D. "Final Results in the Treatment of Cancer, including Sarcoma." *Annals of Surgery,* August, 1905.

The conclusions drawn by the writer from the results obtained by him in the use of the X-ray treatment of malignant disease are well worth our most careful consideration. They must certainly emphasize the very great difference there is between the treatment of superficial and deep-seated malignant disease. They also show how useless it is for a permanent cure, in any but a superficial condition, to be effected, and justly place a great responsibility upon the practitioner who advises delay from a radical and early surgical operation. It is conceded that the X-ray exerts a powerful influence upon cancer cells of all varieties, but most marked in cases of cutaneous cancer. In some cases, chiefly in superficial epithelioma, the entire tumour may disappear, probably by reason of fatty degeneration of the tumour cells with subsequent absorption. In a much smaller number of cases of deep-seated tumours, chiefly cancer of the breast and glandular sarcoma, tumours have disappeared under prolonged X-ray treatment. In nearly every one of these cases, however, which have been carefully traced to final result, there has been a general or local return of the disease within a few months to two years. In view of this practically constant tendency to early recurrence,

furthermore, in absence of any reported cases well beyond three years, the method should never be used except in inoperable cases, or as a prophylactic after operation as a possible, though not yet proven means of avoiding recurrence. The use of the X-ray as a pre-operative measure in other than cutaneous cancer is contra-indicated, because the agent has not yet been proven to be curative, because of serious risks of an extension of the disease to inaccessible glands or to other regions by metastases during the period required for a trial of the X-ray.

A. W. Mayo Robson, D.Sc., F.R.C.S. "Biliary Pulmonary Fistula Cured by Hepato-Dochotomy." *The Practitioner,* July, 1905.

This very unusual complication of cholelithiasis occurred in a young man of 28 years of age, whose previous history consisted of an attack of pain in the gall-bladder region, which was surmised, not definitely diagnosed, to be due to gall-stones. For nine years previous to the operation he had been spitting up pus and bile in quantities varying between a pint and a pint and a half every day. A stone was found impacted in the hepatic duct, the removal of which, with subsequent drainage, resulted in a perfect cure.

Carl Beck, M.D. "The Surgical Importance of the Cervical Rib." *Journal of the American Medical Association,* June 17th, 1905.

While the supernumary ribs of the lumbar vertebræ have only an academic interest, those of the cervical region have a real importance. The observations of disturbances due to a cervical rib are multiplying every year. The anomaly may vary from a slight growth just extending beyond the transverse process to a complete rib with a cartilage uniting with that of the first rib. It is bilateral in two-thirds of the cases, but a complete rib on both sides is a rarity. When not complete, or nearly so, it may give rise to no special symptoms, and before the use of the Roentgen ray it was comparatively seldom diagnosed during life, and most of the reported cases were, therefore, accidentally discovered at autopsy. Even when it caused trouble, the symptoms were often credited to tumour or other causes than cervical rib. It is probably, therefore, a more common anomaly than might appear from the small number of cases reported. Though of congenital origin, it does not cause trouble until about the twentieth year, a fact which is hard to explain. The principal symptoms of the anomaly are a hump-like prominence in the lateral cervical region, a superficial pulsation of the subclavian artery and the appearance of pressure symptoms in the brachial plexus. The trouble is a mechanical one, and the treatment, when re-

quired, must be surgical. It is just as foolish, Beck remarks, to remove a cervical rib which causes no disturbance as it is to leave one that does cause disturbance until lasting tissue changes have been brought about. At times the technique is very simple, but in the majority of cases difficulties are met, and it should be done only by an experienced surgeon. The difficulty is enhanced by the necessity of removing the periosteum, as otherwise recurrence may be expected. Beck finds that a triangular flap incision, running directly downward along the trapezius and then conducted toward the sternum about one inch above the clavicle, fully exposes the field of operation. If the trapezius can not be sufficiently retracted with a broad retractor, a transverse incision must be made into the muscle, for, next to a strict asepsis, the success of the operation depends on extensive exposure of its field. The brachial plexus, which usually runs across the rib, can be pushed aside; the subclavian artery is best pulled forward. The scaleni are carefully divided at their point of insertion, and this is best done by using a Cooper shears and, advancing layer by layer, lifting the several muscle fibers with the flat of the scissors and using the instrument like a grooved director. By means of a ring-shaped periosteotome the rib is then freed of any small muscular appendages. The division is easy with Beck's beak-shaped rib shears, but some may prefer the Gigli saw. Any remains are nipped off with rongeur forceps.

MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY, H. A. LAFLEUR AND W. F. HAMILTON.

Journal of the American Medical Association, August 12th, 1905.

Chapter XXI. of the special article on Immunity treats of the subject of typhoid, its toxins and their characteristics. The typhoid bacillus is one of a rather numerous group of intestinal organisms, the differentiation of which requires special care and is sometimes difficult, except by properly performed agglutination and bactericidal tests. While it apparently does not flourish outside of the body, its resistance is considerable, and it may remain alive and virulent for a considerable time in water, earth, etc. Typhoid epidemics may originate either from water or contact infection. The incubation period varies, as does also the virulence in epidemics. The micro-organisms enter the system through the lymphoid tissue of the intestinal tract, though it may be rarely possible that other infection atria, such as the lungs are used. The bacteria reaching the circulation from the intestinal lesions are killed and dissolved in the blood in large numbers, and it is now believed

that the poisoning of the system takes place through this disintegration of the germs and the diffusion of their toxins in the body. The abundance of the bacilli in the blood stream in the early stages of the disease promises to have some diagnostic significance, as they can be detected by culture methods before the agglutination reaction appears. After, from the tenth to the fourteenth day, they can no longer be found in the blood, and are probably all killed off. In one-third or one-fourth of the cases the urine becomes more or less heavily infected with the bacilli during convalescence, and this may persist for weeks. They are supposed to come from metastatic foci in the kidneys and may be accompanied with cystitis, mild or severe. The rose spots on the skin are credited by Neufeld to similar metastasis. The gall bladder is pretty regularly infected in typhoid, and the organisms may proliferate in this situation for years. It has been suggested that reinfection may occur from their passage into the intestines. Pneumonia, as a complication of typhoid, is usually due to mixed infection, rarely to typhoid germ alone. The latter, however, may give rise to varius after lesions, neuritis, abscess, bone disease, etc., and possibly to meningitis and myelitis. The typhoid bacillus is a facultative pyogenic organism and may by itself cause abscess, usually, however, in purulent conditions, a mixed infection is present. From the foregoing it would seem that the typhoid lesions are largely due to the distribution of the germs, in contrast to what is seen in diphtheria and tetanus. Nevertheless, it would appear that the toxins have a special affinity for the lymphoid tissues and the nervous system. The preference for the lymphoid tissue is manifest early in the disease. Lesions developing in the parenchymatous organs, however, may depend on the localization of the organisms rather than on any special affinity for the tissues.

The seventeenth chapter in the same journal, June 17th, 1905, on Immunity, commences with a statement of the nutritional aspects of Ehrlich's side-chain theory as developed by him in his earlier work on the oxygen requirements of the body and before its application to the explanation of the phenomenon of immunity. It assumes that all substances that enter into the structure of protoplasm (food substances) are bound in the cells and the union must be considered a chemical one. Such a chemical union demands the presence of two binding groups of maximal chemical affinity which are suited to each other. He called these binding groups residing in the cells, side-chains or receptors, those in the food molecules, haptophorous groups. He also assumed that protoplasm is endowed with a large number of such side-chains, chemically adapted to the various foodstuffs, thus providing for nutrition. To adapt this theory, however, to the explanation of immunity it is

necessary that it be elaborated in order to account for the formation of antibodies. Why these are not formed for nutritive substances is explained by assuming it to be probable that, in the normal condition, a physiologic equilibrium exists between the food substances on the one hand and the cellular activities on the other, so that the union of food and protoplasm forms no abnormal stimulus to those of the cell. When, however, union with a toxin occurs, the result is described as a cell defect, consisting in the functional elimination of the receptor. To repair the defect, the vital center of the cell (*Leistungskern*) sends out new receptors, and not only enough, but, in harmony with Weigert's hypothesis, a great excess, so that many are thrown out into the circulation. The proofs of the three tenets that form the framework of Ehrlich's theory are next taken up in detail. The first of these, that antitoxins counteract toxins by entering into chemical union with them, is deemed to be well supported by experiments *in vitro,* such as those made with ricin and antiricin, the neutralization experiments with diphtheria and tetanus toxins and their respective antitoxins, etc. Admitting that these neutralizations are of a chemical nature, the first essential step in the establishment of the chemical or side-chain theory is assured. It is not so easy to demonstrate this as regards the union of agglutinin and amboceptors with the cells, but here also the proof is considered strong. The second tenet: that toxins in injuring cells combine chemically with a definite constituent of the protoplasm, the cell receptor, is held to be strongly supported by Wassermann's famous experiment of neutralizing tetanus toxin by grinding it up with the central nervous system of guinea-pigs. The chapter concludes with a reference to the analogous results obtained by von Dungern with precipitins, showing that albuminous substances, other than toxins, are taken up chemically by the cells.

W. M. Leszynsky. "The Disorders of the Nervous System Arising in the Course of Chronic Nephritis." *Medical Record,* May 20th, 1905.

Aside from the various neurasthenic manifestations occurring in patients with chronic nephritis, many of the transitory subjective nervous phenomena arising during the course of the disease are the result of the uremic (or possibly other) intoxication in varying degree, while nearly all of the transitory objective nervous phenomena, and the more permanent and incapacitating or fatal complications, are primarily due to the concomitant arterial disease. Hence palpable evidence of arteriosclerosis and high blood-pressure is usually of the greatest significance.

The many forms which the nervous disturbances attendant on nephritis assume are described in detail, and several illustrative cases are cited in which the failure to recognize the uremic condition underlying symptoms apparently of nervous origin led to serious results.

J. D. Rolleston. "The Tendo-Achillis Jerk in Diphtheria." *Brain*, Spring, 1905.

A study of the tendo-achillis jerk in one hundred cases of diphtheria Dr. Rolleston summarizes in the following statements:

1. The tendo-achillis jerks are affected in a considerable proportion of all cases of diphtheria, though less frequently than the knee-jerks.

2. The frequency and extent to which they are affected bear, like albuminuria and paralysis, a direct relation to the character of the faucial attack.

3. They are completely abolished in all cases of diphtheritic paraplegia.

4. The absence may be the only evidence of loss of motor power in the lower limbs.

5. Like the knee-jerks they are liable to be affected at the early stage of the disease, and to remain absent after disappearance of all diphtheritic paralysis, properly so-called.

6. Like the knee-jerks, again, they may be unequally affected on the two sides and, like the former they may be unusually brisk before they become sluggish and finally disappear.

7. The achillis jerk, like the knee-jerk, after it has been lost may reappear on one side before it does so on the other.

F. J. Poynton. "The Influence of School-life upon Rheumatic Children." *The Journal of Preventive Medicine*, July, 1905.

Dr. Poynton's investigations and experience enable him to speak with authority on this very important subject. After touching upon the historical development of our knowledge of what is included under the term rheumatic fever, and after making a very few apt comparisons between tuberculosis and rheumatism the writer expresses a wish to change the title of his paper, making it more comprehensive by asking, "What is the influence of school-life upon rheumatic children?"

Two general answers are given: The first, That the discipline and employment of the body and mind, which are the great functions of a well conducted school-life, are good for the child of a rheumatic constitution.

The second, that, on the contrary, these are detrimental to a rheumatic child with rheumatic fever.

Rheumatic children are usually bright and intelligent, and not infrequently attend school with symptoms of rheumatic fever. Among the well-to-do, these children often get the upper hand and romp and play and read to excess, and wear themselves out—and, as a result, they sleep poorly with dreams, night-terrors and sleep-walking. School discipline often prevents or corrects this. Because of the often stealthy onset of rheumatic fever it is difficult at times to be sure that in a fever patient one is justified in attributing to rheumatism the symptoms complained of. Important warnings that the rheumatic condition is present are emphasized by the writer. The first group of these warnings is Chorea. In an out-patient service of three and one-half years among 225 undoubted cases of rheumatic fever, 126 had suffered or were suffering from chorea. Headaches, loss of power of attention—worry over the lessons—are soon followed by grimacing and fidgety jerkings, the signs of the disease developed under such circumstances. "School-work strains the very functions that are damaged and frets the sore." Rest from school is imperative, and the sooner such rest is secured the shorter and milder will be the attack in most instances.

Then chorea is not only important because of its association with rheumatism, but, because of its association with heart disease. Of the 126 cases already mentioned, 84 showed signs of damaged hearts, and when such a condition is found, rest is necessary. Another point upon which stress is laid is the association of tonsillitis and rheumatic fever. In 67 cases of the 225 rheumatic patients observed in the out-patient department, sore throat was one of the first episodes in the illness. The warning here conveyed is against over-crowding stuffy and heated schoolrooms, for we know that under such conditions sore throats are common. The last paragraph but one of this article is too good for any abstract to convey the full import of it, so it is quoted at length:

"The entire question of rheumatism in early life would, I think, repay very careful study. I am glad to have had been given this opportunity, for I have the conviction that we see in rheumatic fever one of the great diseases of mankind, to be ranked with tuberculosis, malaria and cancer in its power for evil. I cannot think it can be anything but a special disease. We have arrived now at a time when we can press forward and attack it from every side, for its explanation is no longer a mystery. We have tried diet alkalies and salicylates, and we have practically now exhausted their possibilities. We see their good and their limitations. Let us also try prevention; we must get help too, from all sides in order to seize upon the disease as early as possible, and those engaged in training the young can help us here.

We can help ourselves, I think, by trying to make a cardiac bruit a reproach."

SCHILLER. "Five cases of Pfeiffer's Glandular Fever." *The Journal*, August 5, 1905.

"Pfeiffer's Druesenfieber," or idiopathic swelling of the glands of the neck, as Neuman calls it, has attracted some attention of late, and Schiller, of Chicago, has seen five so-called cases in April and May in one of the wards of that city. Three of these he selected for detailed description. A *résumé* of the three cases is here given and, in the writer's words, these show that this disease begins with chills, headaches, fever, sometimes vomiting, pains in the throat, and that there follows shortly after the onset of the disease, swelling of the cervical glands, and especially of the glands behind and before the proximal end of the sterno-cleido-mastoideus; that the disease is accompanied by fever, and in severe cases, acute hæmorrhagic nephritis occurs in the early stages, that is from the fifth to the eighth day; the spleen and the liver become enlarged, the swelling and redness of the tonsils and throat disappear rapidly after from three to five days, while the swelling of the glands stays for weeks. The tumour of the glands has a rather characteristic form. There is no periadenitis. Each gland can be palpated separately. The glands feel rather hard and not very tender; the tenderness cannot be compared with the tenderness of glands accompanying tonsillitis. No exanthema is found on the skin or in the mouth.

Society Proceedings.

CANADIAN MEDICAL ASSOCIATION.

The thirty-seventh annual meeting of the Canadian Medical Association was held in Halifax, August 22nd to 25th, 1905. The attendance was large and a comprehensive programme was submitted. The arrangements were admirable, and were undertaken jointly by the profession in Halifax, and the Nova Scotia Medical Society. The meetings were held in the new building of the Institution for the Blind. It proved to be suitable in every way, and was appropriately decorated for the occasion. The usual business session was held the first morning; and it was followed by a meeting of the Dominion Protective Association at which the officers were re-elected.

In the afternoon an address of welcome was given by Lieutenant-Governor George H. Murray, and also by Dr. H. A. March, President of the Nova Scotia Medical Society.

The President and members of the Nova Scotia Medical Society gave a reception in the Provincial Building. There was a garden party at the residence of Senator MacKeen, and a concert in the Public Gardens. The same evening, in addition, there were concerts in the Rowing Club, and armouries; excursions upon the harbour, and to Chester.

The arrangements left nothing to be desired; and the business and entertainments were carried out to perfection. The hospitality of the profession in Halifax was unbounded, and was fully appreciated by the members.

Dr. John Stewart, the President of the Association, delivered the customary address. The address in medicine was given by Dr. D. A. Campbell, upon "The Growth and Development of the Profession in Nova Scotia."

The Association tthen divided into two sections, medical and surgical; the respective presidents being Dr. F. P. Taylor, Charlottetown, and Dr. Murray MacLaren, St. John.

The address in surgery was given by Francis M. Caird, surgeon, to the Royal Infimary, Edinburgh; the address in ophthalmology, by Dr. J. W. Stirling, Montreal; in Gynæcology, by Dr. H. A. Kelly, Baltimore.

The following is the programme which was submitted. Medical section:

Tubercular Pericarditis, Dr. A. McPhedran, Toronto.

The Fever of late (visceral) Syphilis: Its Diagnostic Difficulties, Dr. Arthur Birt, Berwick.

Postural Heart Murmurs, Dr. R. D. Rudolf, Toronto; Postural Albuminuria of Children, Dr. W. F. Eager, Halifax; Arteriosclerosis, by Dr. J. J. MacKenzie, Toronto.

Demonstration of Spirochæta Pallida, by Dr. E. E. King and J. J. MacKenzie, Toronto.

Symptoms, Diagnosis, Prognosis and Treatment of Neoplasms affecting the Central Nervous System, Dr. D. A. Shirres, Montreal.

Cerebral Tumour simulating Vascular Lesion, Dr. F. G. Finley, Montreal.

Lead Poisoning from a Clinical Standpoint, Dr. W. F. Hamilton, Montreal.

Modern Views on the Therapeutic Value of Alcohol, Dr. A. D. Blackader, Montreal.

The Gopher, a Possible Substitute for the Guinea Pig, Dr. S. W. Hewetson, Pincher Creek.

Dissemination of Disease by Railway Trains, Dr. J. F. McDonald, Hopewell.

The Treatment of Small-pox without pitting, Dr. Archibald Leitch, St. Thomas.

Our Detention Hospitals, Dr. J. D. Page, Quebec.

Atmospheric Humidity in Relation to Health, Dr. A. P. Reid, Prov. Health Officer.

The Prodromata of Insanity, Dr. W. H. Hattie, Supt. Nova Scotia Hospital.

Cerebrasthenia, Dr. D. Campbell Meyers, Toronto.

Case Reports. (*a*) A Case of Chylothorax; (*b*) Further Notes on a Case of Myelogenous Leukæmia with Disappearance of Splenomegaly and Myelocytes, Dr. D. G. J. Campbell, Halifax.

Surgical section:

Report of cases of Septicæmia and Pyæmia from a Surgical Standpoint, Dr. W. F. England, Winnipeg.

Case Reports. (*a*) Recent Fracture of the Clavicle, with Operative Treatment; (*b*) Rupture of Urethra with Extravasation of Urine; Operation; Recovery, Dr. J. W. T. Patton, Truro.

Case Report: Chorion-Epithelioma, Dr. F. A. L. Lockhart and Dr. B. D. Gillies, Montreal.

The Possibility of Stamping out Cancer, especially of the Uterus, Dr. Lapthorn Smith, Montreal.

Exhibit of Illustrations of Radium Treatment, Dr. Myron Metzenbaum, Cleveland.

Cæsarian Section, with Report of Nine Cases, Dr. H. L. Reddy, Montreal.

Post-Operative Pulmonary Thrombosis, Dr. Herbert A. Bruce, Toronto.

Tracheotomy as a Remedy in Severe Whooping Cough, Dr. A. B. Atherton, Fredericton.

Experimental Work in Intestinal Adhesions, Dr. Ed. W. Archibald, Montreal.

Can the Vermiform Appendix while itself free from Obvious Lesion be the source of Purulent Peritonitis, Dr. James Bell, Montreal.

The Equipment of the Canadian Army Medical Corps, Lieut.-Col. G. Carleton Jones.

Combination Operation for Radical Cure of Inguinal Hernia, Dr. F. N. G. Starr, Toronto.

The Surgery of the Stomach in Non-malignant Conditions, Dr. Geo. E. Armstrong, Montreal.

The Buried Suture, Dr. J. M. Elder, Montreal.

Mesenteric Cyst with Intestinal Obstruction, Dr. Murray MacLaren, St. John.

Intestinal Obstruction, Dr. M. Chisholm, Halifax.

Indications for Operations in Ophthalmic Practice, Dr. R. A. Reeve, Toronto.

Case Report. Carcinoma of the Lachrymal Gland, Dr. E. A. Kirkpatrick, Halifax.

Discussion in Obstetrics. The Management of the Puerperal State, Dr. Thomas Walker, St. John, Dr. H. L. Reddy, Montreal, Dr. A. A. MacDonald, Toronto, Dr. Eccles, London, Dr. M. A. Curry, Halifax, Dr. D. McIntosh, Pugwash.

The following officers were elected: President, Dr. Alexander McPhedran, Toronto; general secretary, Dr. Geo. Elliott, Toronto; treasurer, Dr. H. B. Small, Ottawa; vice-presidents, Prince Edward Island, Dr. H. D. Johnson, Charlottetown; Nova Scotia, Dr. G. Carleton Jones, Halifax; New Brunswick, Dr. Emery, St. Johns, Quebec; Dr. H. S. Birkett, Montreal. Ontario, Dr. J. D. Courtney, Ottawa; Manitoba, Dr. H. P. Prowse, Winnipeg; North-West Territories, Dr. H. C. McKid, Calgary; British Columbia, Dr. R. E. McKechnie, Vancouver.

Local secretaries, Prince Edward Island, Dr. Simpson, Charlottetown; Nova Scotia, Dr. J. R. Corston, Halifax; New Brunswick, Dr. J. A. Scammell, St. John; Quebec, Dr. Ridley McKenzie, Montreal; Ontario, Dr. Harold Parsons, Toronto; Manitoba, Dr. J. R. Davidson, Winnipeg; North-West Territories, Dr. J. Hislop, Edmonton; British Columbia, Dr. W. H. Sutherland, Revelstoke.

Executive Council, Dr. W. P. Caven, Toronto; Dr. A. A. McDonald, Toronto, and Dr. F. L. M. Grasett, Toronto.

Messrs. P. Blackiston's Son & Co. have favoured us with some advance sheets of A Manual and Atlas of Orthopedic Surgery, by Dr. James K. Young, Professor of Orthopedic Surgery, Philadelphia Polyclinic. The book will contain 900 pages and nearly as many illustrations. If one may judge from the specimen pages, the book will be a noble volume.

John Lane Company, The Bodley Head, has begun to issue a series of medical and surgical handbooks under the title "The Practitioner's Handbooks." The first volume of the series is devoted to The Rheumatic Diseases, and has been entrusted to J. O. Symes, Assistant Physician and Bacteriologist to the Bristol General Hospital. The second is concerned with Hysteria and Neurasthenia, and is the work of J. Mitchell Clarke, Physician to Bristol General Hospital and Professor of Pathology, University College, Bristol.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXXIV. OCTOBER, 1905. No. 10.

ANNUAL ADDRESS: CANADIAN MEDICAL ASSOCIATION, 1905.

BY

JAMES STEWART, M.D., President,

HALIFAX.

Friends and Colleagues:—My first duty is to thank you for the honour you have conferred upon me in electing me to preside over this meeting.

I can assure you that my pride in this great honour is tempered by a feeling of very great responsibility, and a sense of marked inaptitude for the duties of this position. And in thanking this Association for an undeserved honour I wish to thank especially the most earnest, energetic and cheerfully laborious Executive which any President ever had.

I wish to express my sense of obligation for the presence of His Honour the Lieutenant-Governor, whose more than eighty years of strenuous and honourable life give exceptional value to the kind word of appreciation in which he has just welcomed our Association to this city.

Permit me also to express my pleasure in having on the platform my dear old friend and colleague, the Hon. D. McN. Parker, one of the founders of this Association.

And now I bid you welcome, welcome to this picturesque Province of Nova Scotia, and to the City of Halifax.

I bid you welcome on behalf of the medical men of this province; for when it became known that the Canadian Medical Association was to meet here, there came in from all over the province, from the county societies and from indvidual practitioners, expressions of a desire to have a share in your entertainment, and therefore it is that we are here to-day as the guests of the Medical Society of Nova Scotia, and that we have listened to the warm welcome of the President.

In welcoming you to this place I should perhaps say a few words of introduction to a city and a province new, perhaps, to many of you.

If you are interested in history, you will find much here to occupy your attention.

In the early morning mists of our history we see Leif Ericson, in his Viking galleys steer along our coast. Four hundred years ago the Cabots took possession of these regions for King Henry VII. And then for two hundred years the intrepid navigators of Old France, DeMonts, Champlain, St. Denis, LaTour, explored these bays and headlands.

If you can spare time to visit Annapolis you will find traces of the French occupation, and see still in good preservation the old powder magazine, the oldest European masonry in America north of Mexico, built of stone brought from France. Midway in the province, you come to Grand Pré, with its crowded memories of the past, and its wide acres of fertile dyke lands which we owe to the industry of the early French settlers. And in the extreme east you will find the historic ruins of Louisburg, where the sea birds cry over the rain swept turf which covers many a gallant heart. Nova Scotia may, indeed, claim its share in thrilling memories of "old unhappy far off things and battles long ago."

We can point with pride to the distinguished names of many Nova Scotians. I shall avoid the troubled waters of political life and will mention only the fact that two of the most distinguished college presidents in this country were Nova Scotians, viz., Sir J. W. Dawson, of McGill, and Rev. G. M. Grant, of Queen's. In literature we are proud of the reputation of Haliburton. The hero of Kars and the defender of Lucknow were both Nova Scotians. Our shipbuilders and our sailors have carried our name round the world, and it is safe to say that there are few ports in the world where you may not find a Nova Scotian sea captain.

This city of Halifax is crowded with historic memories. It was up this harbour that the ill-fated squadron of D'Anville, shattered and storm tossed, came to anchor, to meet a more deadly foe than wind and wave in the pestilence which destroyed hundreds of brave sailors. It was here that Cornwallis, stout soldier and sagacious statesman, arrived in 1749 and laid the foundations of this city. St. Paul's church, built in 1750, is the oldest Protestant church in the Dominion of Canada, and the old churchyard of St. Paul's is one of the most interesting cemeteries in this country. In it were laid side by side the heroic dead who made the names of the Shannon and the Chesapeake famous.

In the old Provincial Building, where we hope to meet this evening, Mr. Lawrence Kavanagh stood in 1827, the first Roman Catholic mem-

ber since the Reformation to represent a constituency in British dominions.

And there is another old building here, which, to my mind, should be full of interest to all Canadians. It was a Nova Scotian, Sir Samuel Cunard, who had the enterprise to start the first line of transatlantic steamships, and there are men in Halifax to-day who remember when the Britannia, the first Cunarder, came up the harbour and to the shipping office of S. Cunard & Co.

And may I draw your attention to our geographical position, and to our incomparable harbour? It has the largest dry dock on this side of the Atlantic, and it is defended by one of the most powerful fortresses in the world, and at any hour of day or night, summer or winter, in any state of tide, the largest and swiftest ships afloat may come alongside the pier, or leave it punctually, without delay or interruption.

I trust that when this Association meets next in Halifax it will find the western terminus of the fast Atlantic service, safe in the keeping of the "Warden of the Honour of the North."

Finally, bear with me if I point to our Educational Institutions. Dalhousie University, the only undenominational college in the province, has not only supplied professors to several universities in the United States, but furnished a distinguished successor to the renowned Tait, of Edinburgh, and only the other day, sent one to the University of Birmingham. We have also a medical college whose graduates are now dotted all over the Dominion and the United States, reflecting credit on their province and their Alma Mater. There is the Institution for the Deaf and Dumb, where results are obtained equal to those of any similar institution anywhere; and finally we have this School for the Blind, in the hall of which we are met, which is presided over by Dr. Fraser, a gentleman second to none on this continent in the skill and success of his methods, and whose marvellous personality overcomes all disabilities and inspires all who come in contact with him.

This is not the first occasion on which the Association has met in Halifax.

In 1875 the Association first met here, and again in 1881, when the General Secretary was a young Montreal physician, whose name is now a master word in the Schools of Æsculapius the world over—the Regius Professor of Medicine in Oxford. At the meeting of 1881 the attendance was 53, to-day we have already registered over 200.

It is only fitting that I make reference to some of those who were with us then and who to-day are not. The President was Dr. G. E. Fenwick, of Montreal, a distinguished surgeon, who occupied the chair of Surgery in McGill University for fifteen years. The Vice-President

for Nova Scotia was the late Dr. R. S. Black, one of the leading physicians of Halifax for many years, a man of wide culture, and especially familiar with Spanish history and literature.

There are two names to which I wish particularly to refer in this place on account of their connection with this province and their interest in this Association. The late Dr. Edward Farrell was one of the foremost citizens of Halifax, and took a leading part in our political life, having been a member of our legislature. He was one of the founders of the Halifax Medical College, where he held the chair of Surgery from its foundation until the time of his death, and his admirably lucid, well ordered and emphatic style made him one of the best lecturers whom I have ever heard. He was surgeon to the Victoria General Hospital for thirty years. He took a keen interest in the subject of tuberculosis, especially in the organization of methods to prevent the dissemination of the disease, and was appointed by the Dominion Government to represent us at the Congress on Tuberculosis in Berlin. And it was in the discharge of his duty as a member of a Commission appointed by our local Government to select a site for a Sanitarium, that he contracted his fatal illness, through exposure to cold and wet when driving in the country; and on the first day of this new century he passed away from among us; but the brave and cheerful spirit, the ready wit, the warm kind heart are memories that remain.

And what can I say of Dr. Wm. Scott Muir? I may say, I believe, that no member of this Association was better loved or more heartily welcomed to its meetings. He had been a vice-president, and upon at least one occasion he was nominated for the presidentship, but generously insisted on giving way to others. He was a very regular attendant at our meetings, and his stalwart figure and cheery voice had become familiar to the profession throughout Canada. His business ability and his knowledge of affairs made him invaluable in committees, and his contributions to the scientific work of the Association were marked by keen observation and practical common sense. He was my own dear friend and I shall not trust myself to say more of what his loss has been to us.

And so one by one, just as we learned to value them more, our comrades fall, and what can we say but

> " . . . . Fare you well:
> Hereafter, in a better world than this,
> I shall desire more love and knowledge of you."

It is, perhaps, a weighty sense of the responsible position in which you have placed me that gives to my thoughts to-day a somewhat serious turn.

I look upon this great assembly, I think of the years of study, the expensive education, the physical and intellectual toil, the laborious days and anxious nights, and when I consider the results I am tempted to ask—what is the good of it all? We toil to save, and how often it is that the valuable lives, the bread winners, the wise, the strong, the true, are taken, and we succeed in saving the idle, the dissolute, the degenerate. There is not only a sense of futility, there is horror in the thought that our art may in unworthy hands be degraded to be a servant of evil passions.

And have all these then—our brothers and our forebears—died in vain? Have their lives been wasted, and would it have been better had they had no part in aught that's done beneath the circuit of the sun?

Perish such thought! These dark imaginings are nothing but rank pessimism, and pessimism is fatal to us of all men. Of all men the medical man must be an optimist. If our work is to save and prolong life, we must believe that life is something worth having and worth keeping, or we are not true to ourselves, and are false to other men.

Now, what is the value of life? Character. And what makes life worth having and worth keeping?

The more we reflect upon human life in all its manifestations the more do we become convinced that its true criterion is character. To the unthinking it may seem that this subject is outside our province, and that health and character are in different categories. But we cannot dissociate the physical from the intellectual and moral elements of our nature. As anatomists we may study the physical framework of man, but as practitioners of medicine we must consider the living man as body, soul and spirit.

Our nature is threefold, and health and character pertain to each component, the Physical, the Intellectual, and the Moral. We may admit that so far as we can see perfect physical health may exist with feeble intelligence and degenerate morals, but the ideal condition for which we should aim is the balanced blend and perfect equilibrium of all these elements. And even though at first glance it may seem that one component may attain perfection while the others are defective, a close observation convinces us that it is not so. The brilliant intellect is hampered in its working by the diseased body which forms its transient tabernacle, the "eye sublime" subdued to that it works in by a vile spirit, loses its brightness, and

> "Faults in the life breed errors in the brain,
> And these reciprocally those again."

And, as Maudsley put it the other day at the British Medical Association, "Mind works in every function of the body; a sound body is the foundation of a sound mind and the lunatic is a lunatic to his finger ends." We cannot think soundly about life if we ignore this essential and indissoluble trinity. Experience tells us that in our work of detecting, preventing, eliminating disease, we cannot treat our patient to advantage if we regard only his physical condition and neglect consideration of his mental equipment and moral proclivities. Indeed, the manner of man our patient is is determined more by those invisible forces than by his corporeal form, or, as we have it in the sayings of the Wise Man, "As he *thinketh* in his *heart* so *is he.*"

And it is with the community as with the individual: that which makes a nation great is not the wealth of its people or their intelligence, but their good name. It is because I believe that the medical profession may have a large influence in moulding the spirit of a nation, that I wish in the hour which custom allots to me here, to offer a few remarks on National Character and Public Health.

How may our national character help or hinder us in our work, and how may we, as the guardians of the public health help to make or mar our national character?

The public health laws of a country will depend largely on the character of the people. The character of the people will be conditioned largely by their public health, that is, by that standard of health of the individuals composing the nation, which, as a national ideal, all the people are interested in and willing to make sacrifices for. This is Public Health in the largest view.

And first let us consider some of the features of national character which may influence public health.

There is *love of liberty,* and a free people is usually a vigorous and healthy people.

But there is a liberty not according to knowledge. When an individual claims the right to act according to his judgment in matters of which he is profoundly incapable of judging, his boasted liberty may prove a perilous possession to himself and his neighbours. When a community refuses to be bound by laws which Sanitary Science has declared to be necessary, it abuses its liberty and may bring serious damage upon itself. The laws of health cannot be broken with impunity. And this spurious love of liberty frequently stands in the way of sanitary reform.

We have a striking instance of it at present in the stupid rebellion against sanitary laws shown by many communities on the lower Mississippi in the present epidemic of yellow fever.

From the thought of liberty to that of bondage may seem a strange step, yet the next national characteristic which I mention as having an influence on public health, namely, the worship of material things and the feverish haste to accumulate wealth, lays upon us a bitter and grievous bondage. The public, and the representatives of the public are too apt to regard with impatience if not with scorn the claims of any interest which does not seem to have immediate or direct bearing on the great national occupation of money making.

There is an epigrammatic expression in the works of Aristotle which might well be inscribed in letters of gold over the council chamber of our legislatures and our boards of trade. It may be freely translated thus, "It is not seemly for a free people to be always seeking for cash returns."

I think the Greek philosopher saw the glitter of the golden manacles and would warn us, if we value freedom, to set our affections on other things than gold.

This national characteristic, disinclination to invest in medical securities, is perhaps due to various things. It is partly due to ignorance, to an incapacity of appreciating scientific teaching, to a hesitation in trusting the expert opinion of Science—for which, perhaps, Science herself is somewhat to blame. It is not entirely the fault of avarice. When our people are convinced that any measure is for the public weal, they are generally willing to aid. And I may, perhaps, draw attention here to the fact that the first Public Sanitarium for Tuberculosis, the first in Canada erected as a Government work, is now in operation at Kentville, in this province.

But, as a rule, there is great difficulty in inducing corporations and municipalities to expend a reasonable sum in carrying out the details of a Public Health System, to pay for water supply, drainage, sewerage, removal of garbage, disinfection. It is not too much to say that apathy in regard to questions of public health is a national characteristic.

Like the Sybil with her precious scrolls Hygeia comes to Demos, and Demos will not buy.

And the yearly tale of death and disease, preventible by sanitary measures, increases, and perhaps the only effectual clarion to rouse the indifferent will be, as it has been before in the world's history—a pestilence.

Possibly if the public could see the mere financial loss incurred by preventible diseases, the loss of time, the inefficiency of workers, the increased rates to maintain the families who have lost the bread winner, they would be willing to give more to the Health Department.

There is a feature of our public life which, I think, may fairly be described as a national characteristic, and that is our tolerance if not encouragement of quackery. I mention it here because I wish to point out the great injustice of this to our profession.

The youth who aspires to the practice of medicine is required by the laws of his country to undergo a certain course of study, tedious and expensive. He has to pass certain examinations and give proof of familiarity with the requirements of his profession. He has to satisfy the authorities as to the integrity of his moral character before he is allowed to begin practice. And now see him, embarking on the practice of his profession. From his window he sees the apothecary's shop, and knows that for one patient who has gone there to have a prescription filled, a dozen go to buy some proprietary medicine. He buys the morning paper and finds one-tenth to one-fifth of the space for which he pays taken up with advertisements of nostrums, often with testimonials signed by otherwise intelligent and moral people. He dines at his club and hears of nothing but the wonderful cures wrought by some itinerant quack who has never fulfilled one requirement of the Medical Act. Truly Demos loves the quack and seems to have a special spite at him who would practise his profession scientifically in accordance with the noble spirit of the Hippocratic oath.

There are, indeed, many ways in which the traits of national character may influence the health of the people.

In the Report of the Royal Commission on Physical Deterioration no evidence seems to me more interesting than that of Mrs. Close. This lady, who has given her life to the study of domestic conditions among the labouring classes of almost every country in Europe, has no doubt of a deterioration in the physique of the labouring classes in England. And the explanation of this she finds in a diminished sense of duty, a debased ideal of the duties of wife and mother. Love of amusement and the attractions of the theatre interfere with the old fashioned domestic economy. Houses are untidy. Food is badly cooked. Early rising is a vanished virtue. The children are hurried off to school without proper breakfast, and the husband finds in the public house the comfort he is denied at home. The picture is too true and its replica may be found in every town in Canada.

And now how may we in the exercise of our daily calling contribute to the development and growth of national character?

In the first place we should accustom ourselves to remember that the body with which we deal is of value only as the tenement and instrument of an indwelling spirit, and that the health of the body is our

care simply because its ill health may hamper the action of the intellectual and moral energy within it.

When we prescribe diet and exercise let us remember that the luxury and excess and love of ease which are the most potent factors in disease, injure mind and soul as well as body. Let us press the claims of temperance—that true temperance which walks the golden midway, and turns neither to asceticism nor to indulgence.

In the love of Canadian youth for manly exercise we have a most powerful lever for raising the standard of health and morals.

If we are consulted as to occupation, let us sing the praise of the simple life. Civilization is becoming terribly complex, and it seems on all hands to fungate into luxury. And history points a warning finger to the past. When culture joined hands with luxury decadence was already at the door.

This is the age of sedentary occupations, and a large proportion of the ills which we are called to treat owe their origin to the exigencies of the sedentary life. It is not a natural life for man.

Will it be thought very much out of place if I say, let us honour the farmer. His is the only natural, the original and the essential work. There is a moral in the fable of Hercules and Antaeus. It was not until Hercules had lifted the giant bodily from the ground and so broken the magic contact that he was overcome, and the prescription for many of the ills of the body and of society to-day is in the cry "back to the land!"

I have spoken of occupation as bearing on health and character. There is one other fact in our social life to consider, and that is our amusements. Indeed, among some people this question seems to take precedence of work. Amusement and relaxation are necessary, but to give them so prominent a place in our life as they appear to occupy to-day is a menace to the health of the body which they are meant to secure, to the intellectual powers and to moral character.

Pleasure takes precedence of duty, and complainant sophistry may even justify this order. To scorn delights and live laborious days is now considered folly. We amble along the primrose path of dalliance and avoid the "asperous way that leadeth to the house of sanity."

It is a delightful and a hopeful omen to see an interest taken in athletics, and to know that our country takes such an honourable place in all manly exercises. But for one young man whom you will find on the football field, or plying oar or paddle, you will find many who simply waste their time, their only interest in athletics being the spectacular interest of a match or the dubious financial result of a bet.

If we could only influence these young men to take a more heroic, a more manly view of life we should be doing them and our country a service.

Even in our sports there is room for some earnestness, and it might be well if we took our pleasures, as Froissart says our ancestors did, seriously, and sympathized with the spirit of the old English ballad of Ulysses and the Syren.

To spend the time luxuriously
Becomes not men of worth.

* * * * * *

. . . . . suppose there were
Nor honour, nor report,
Yet manliness would scorne to weare
The time in idle sport;
For toyle doth give a better touch
To make us feel our joy:
And ease finds tediousness, as much
As labour yeelds annoy.

* * * * * *

But natures of the noblest frame
These toyles and dangers please:
And they take comfort in the same,
As much as you in ease:
And with the thought of actions past
Are recreated still;
When pleasure leaves a touch at last
To show that it was ill.

This was the "great spirit of high desire" of the Elizabethan days.

But, in addition to what we do effect in this way in our own generation we and our successors wield a great power in the laws of heredity.

The observation of centuries and the universal experience of everyday life, no less than the laborious and well planned experiments of science tell us that the organism of to-day is the resultant of forces acting in the past, and the diversity of operation of these forces is what gives Nature her infinite variety. To us who see every day the working of the inevitable law which visits the sins of the fathers upon the children, and to whom the phenomena of reversion and atavism and variation are constantly present, to us heredity is one of the great powers of Nature. And we believe that by a careful application of scientific principles to the environment, education and occupation of

our race we may and can exercise a beneficial determinant action on generations yet to be, eliminating disease, stimulating and clarifying mental processes, strengthening and purifying moral qualities.

But, enormous and far reaching as we believe the power to be of the laws of heredity, we must not allow them to dominate us. They are not the forces of a blind, inexorable Fate. These laws are well ordered in all things. When, in view of the depressing influences of the researches of Lombroso and his school, we feel that we are all smitten, when each scans anxiously his brother's face for stigmata, or fancies himself the bearer of a hall mark of some degeneration, let us remember that not only can we, to some extent at least, control the working of the laws of heredity, but so far as we ourselves are concerned, can bid them defiance.

We may—if we will, say, "Evil, be thou my good," and turn our backs upon our good angel who points us to an honourable ancestry and bids us follow in their path. But, when the Angel of the Pit, with mocking leer, that "Man of Hell who calls himself Despayre," bids us throw up our hands, tells us we are the captives of circumstances bound in millenial chains, tempts us to give up the hopeless struggle, we may—if we will, say, "stand thou on that side, for on this am I." We must not forget that divine part of us, that mysterious, undefinable, undeniable power for good or evil—the human will.

Thirty years ago a young man lay in the Royal Infirmary in Edinburgh. Fortune had not smiled upon him, and now, maimed and crippled for life, that life seemed doomed "to dumb forgetfulness a prey." But not to Despair. The "star of the unconquered will" rose and stood over the lonely bed of William Ernest Henley and inspired these lines, the finest assertion of the Free Will I have ever seen:

Out of the night that covers me,
Black as the pit from pole to pole,
I thank whatever gods may be
For my unconquerable soul.

In the fell clutch of circumstance
I have not winced nor cried aloud,
Under the bludgeonings of chance
My head is bloody, but unbowed.

Beyond this place of wrath and tears
Looms but the Horror of the shade,
And yet the menace of the years
Finds, and shall find me, unafraid.

It matters not how strait the gate,
How charged with punishments the scroll,
I am the master of my fate;
I am the captain of my soul.

"Sir," said Dr. Samuel Johnson, "the man who has vigour may walk to the East as well as to the West if he happen to turn his head that way."

Heredity may condemn us to a life of struggle with bodily weakness and mental incapacity, to "defects of doubt and taints of blood." It cannot chain the free spirit, and he who can say, I will, I will not, is still a man.

We, the members of this Association, as practitioners of the Healing Art are the heirs of a great past. The Masters of Medicine have passed from our world, but their influence survives—their spirits still live.

Nothing is plainer in the study of the lives of the greatest of our predecessors than the influence of great ideals. From the days of the grand pagan whom we call the Father of Medicine and whose recognition of the power of spiritual forces is so clearly seen in the oath which he laid upon his successors, to the great authorities of to-day, we can trace the power of a faith in the Unseen Universe.

Let me quote from the illustrious Pasteur. "Happy he who carries with him a God—an ideal of beauty, and obeys him, an ideal of Art, an ideal of Science, an ideal of Patriotism, an ideal of the virtues of the gospel."

And if we are to have strength for our work, courage and hope to cheer us in our long contest with all these shapes of foul disease, we must bear in mind the supreme importance of high ideals—of life—and of man.

"You touch God," said Novalis, "when you lay your hand upon a human body." The spark of life we tend is a part of the divine, and immortal.

"The soul that rises with us, our life's star,
Hath had elsewhere its setting,
And cometh from afar."

We deal not with Dust and To-day, but with Life and Forever. And when we realize this our own nature becomes ennobled to that it works in and can rise to still greater power.

We who deal perforce so largely with the material and perishable, if we would keep sight of the indestructible and immortal should culti-

vate a power of detachment, should rise through the cloudy region of a world, and accustom ourselves to the free air and larger atmosphere of a universe.

As the Healer of the world came from beyond its confines so we who would help in the healing should be able to rise into the ether where we can have a proper perspective of Time. We should revisit the ethereal region where with Amiel, we may "Listen to the music of time and the hosannas of the world," or with our own Wordsworth hear "oftimes the still, sad music of humanity" and be conscious of

> "A presence that disturbs us with the joy
> Of elevated thoughts; a sense sublime
> Of something far more deeply interfused,
> Whose dwelling is the light of setting suns,
> And the round ocean and the living air,
> And the blue sky, and in the mind of man."

And how may we best acquire this power but by the study of our subject—the philosophic study of man.

What our profession requires to-day, even more than an increase in scientific knowledge, is more of the study which gave character to the great masters of the past, and a realization of the grandeur of the divine possibilities in man. True, we see much of the lower nature, weakness and suffering and sin, but we also see in every soul the capacity of Honour, Courage and Love. Let us rather look on these. "Whatsoever things are true, whatsoever things are pure, whatsover things are lovely if there be any virtue let us think on these things.

ADDRESS ON OPHTHALMOLOGY.

BY

J. W. STIRLING, M.B.,

Lecturer on Ophthalmology, McGill University.

Mr. President and Gentlemen:—I have to thank you for the honour you have done me in asking me to deliver the special address on Ophthalmology at this meeting of the Canadian Medical Association, and more especially do I appreciate it from the fact that this meeting is held in my native city. One cannot but feel a certain amount of diffidence in addressing such a large assembly of one's fellow workers in our noble profession, but I trust that what I have to tell you may both be of interest to you, and also of some assistance in the prosecution of your professional calling.

Delivered before the Canadian Medical Association, Halifax, August, 1905.

I must claim to a certain extent the indulgence of my fellow workers in Ophthalmology, who may be here, if I do not present them any thing very advanced. I would remind them of the fact that I am here to deliver an address to the profession as a whole, and that technical points which would be of interest to them might be far from interesting to the majority of my hearers. Yet what I have to say may not be lacking in interest for them.

I have chosen as the subject matter of my paper a few salient points in the diagnosis and treatment of the more common diseases of the eye. My communication will be almost entirely based upon my own experience drawn from the very large clinical material at my disposal in the Montreal General Hospital.

Conjunctivitis is one of the commonest eye diseases which confronts both specialists and general practitioners during their career; yet in no other ocular disease has there been more room for advance both in the matter of diagnosis and of treatment. Happily during the past few years great progress has been made in both these particulars and the results have been crowned with success. Looking back over my comparatively short career, well do I remember, how in the old hospital days in London there was a routine treatment for conjunctivitis; the diagnosis was strictly limited by the nature of the secretion and condition of the conjunctiva, and the treatment consisted in the use, or I might rather say the abuse of various astringents. In some cases this treatment happily hit the mark, but in others the result was a failure or else a prolonged chronicity. With the promulgation of the germ theory, there was an opportunity for advance, yet but little was done in this direction in eye diseases for some years. Astringents were at this time dropped to a certain extent, and antiseptic lotions took their place; yet a varying amount of empiricism persisted and results were not always so successful as one could wish. During the past few years, however, great strides have been made by Koch, Weeks, Morax and Axenfeld; new germs have been discovered; their relationships to certain forms of ocular disease have been worked out; the conditions especially favoring their development have been studied; the symptoms they give rise to have been noted; and lastly what is of most importance to the clinician, appropriate remedies are being discovered. There is, however, much left to be done, as evidenced, for example, by the uncertainty which overhangs the germ of that scourge trachoma.

To start with be it remembered the conjunctival sac in the new born is held to be free from bacteria, but immediately the infant has entered on its existence in this world, the conjunctiva is exposed to infection

from the atmosphere or from the skin with which it is in immediate proximity at the edges of the lids. The organisms thereafter found in the eye vary greatly in their nature and pathogenicity. Their malignancy depends a great deal upon the resisting power of the organism. It would appear that it is impossible to render the conjunctival sac absolutely sterile, since any bactericide sufficiently strong to effect this would exert a deleterious influence on the eye. The tears exert a certain bactericidal action which may be due to a mere dilution of the secretion, and this is seconded by the muscular action of the lids in winking which force the secretion into the tear sac (the drainage system of the eye) whence it escapes into the nose. One thing is certain: the tears are a bad culture medium for bacteria.

Another important factor in limiting the development of the bacteria in the eye is the temperature of the exposed eye ball. McGillivray of Dundee has worked this out very carefully, and has shown that the surface temperature of the exposed cornea is about 18 degrees below that of the body temperature, whereas if the lids are kept close the conjunctival and corneal surface temperature soon rises thereby favouring the development of many bacteria. In addition to this, of course, the eyelids being closed does away with the mechanical drainage function, to which I have just referred. A good example of this is frequently met with in cases of phlyctenular disease in which the eyes have been kept bandaged. This closure is invariably followed by a marked extension of the disease which can be readily checked by desistence from the use of compresses, and also what amounts to the same thing by the prevention of the child burrowing its head into pillows and cushions.

Of course, when operating on the eye we have to bandage it afterwards, but this is with the sole intention of getting a speedy union of the wound, and by this means preventing the possibility of a deep infection of the eye. As soon as firm union has taken place all closure of the lids should be abandoned.

In my clinic at the hospital all cases of conjunctivitis, tear-sac trouble and ulcerative keratitis undergo a thorough bacteriological examination before treatment is undertaken. Invariably also a bacteriological examination of the secretion is made in all cases before operation.

The invaluable nature of this examination must, of course, be self-evident to you, as a means of diagnosis; as a precautionary measure; as an indication for treatment.

I may perhaps be allowed to describe the very simple process of making this examination, although doubtless the majority of you know it already.

This bacteriological examination short of making cultures of the germs is by no means difficult, and should not be beyond the power of any medical man. The little extra trouble that it entails upon the practitioner will be amply rewarded by the results obtained.

With a small platinum wire, sterilized in a spirit lamp's flame, a small amount of the secretion is removed from the conjunctival sac, and smeared over a glass slide. The great point in the smearing is to tease the secretion well out on the slide; a drop or two of Gentian violet solution is dropped on the smear, after 25 seconds this is washed away with water; a few drops of Gram's iodine solution is dropped on, and left for about 15 seconds; it is washed off with alcohol until no more coloured matter is observed to come away; the specimen is then washed with water and a 5 per cent. solution of safranin is dropped on the specimen, and left for five seconds when it is washed off with water. This is a routine method for the ocular secretions.

As you all know, conjunctivitis has been classified according to the nature of its secretion or conjunctival changes, catarrhal, muco-purulent, granular, and membranous types; but since bacteriological investigations have been carried out there is a strong likelihood that this will be changed. Similar clinical symptoms are caused by very different forms of bacteria, the treatment of which varies greatly according to the bacterial finding.

In the catarrhal type of conjunctivitis we recognise two main varieties, the acute and the chronic, the symptoms of which are too well known to you to need repetition. The vast majority of cases of the acute type has been found to be due to the presence of the Koch-Weeks bacillus and in only a few cases have other germs been discovered. This form of bacillus as a rule attacks children and has even been found in the new born. As a rule these bacilli can only be discovered during the first few days of the disease.

The bacilli lie between the leucocytes and also within the protoplasm. Sometimes they even extend into chains of two or three links side by side; they are decolourised by Gram's iodin; they have an incubation period of two or three days; and the second eye is generally infected two or three days after the first; they seem to penetrate into the superficial layers of the epithelium and not into the deeper tissues; they do not give rise to chronic conjuntivitis. The bacilli appear as very short fine rods staining less deeply than the nuclei of the cells, the ends are rounded and also show a deeper polar stain. I have a specimen under the microscope for your observation.

The treatment of this form of conjunctivitis consists in the applica-

of nitrate of silver, 2 per cent. solution, or the 3 per cent. solution of largin.

Entirely distinct from this form is a chronic variety of catarrhal conjunctivitis affecting mainly the conjunctiva of the lids and especially well marked at the inner and outer canthi; this disease sometimes goes by the name of angular conjunctivitis; there is a slight mucous secretion, the conjunctival papillæ are not swollen, the inner canthus and the lid margins are markedly red, in time the roots of the cilia become affected, as does also the tarsus, the cilia then fall out and the lid margins curl inwards. It occurs at all ages but more especially in adults, and is most frequently met with during the months of June, July and August. Superficial infiltration of the cornea occurs and sometimes even severe purulent spreading ulcers are found which bear a marked similarity to the malignant ulcus serpens.

In 1896 Morax and Axenfeld both discovered a diplo-bacillus which by a series of exhaustive investigations they found to be the cause of this disease. The bacilli are large 2 μ by 1 μ and generally occur in pairs and chains; they are decolourised by Gram's method after staining with Gentian violet. The disease is very infectious and the bacilli retain their virulence for a long time.

It has been found that solutions of sulphate of zinc have almost a specific action in the cure of this disease, and this may be freely applied even when ulcerations of the cornea arise. The zinc salt is used in a solution varying in strength from a half of 1 per cent. up to 2 per cent., the milder collyria being reserved for those cases exhibiting the greatest irritation. It has also been found that the solutions of the silver salts appear to be inert in the treatment of this condition. I might cite as an example of the action of this drug, even in severe ulcers, one case out of several which have lately come under my observation. The patient had developed an ulcer in the cornea probably of traumatic origin for which he had been treated at his home in the country near Montreal. He thought that his eye had been scratched very slightly with a twig, and did not pay much attention to it until it became very painful, when he sought advice from the family physician; and, treatment failing to check the condition, he came into my clinic at the General Hospital.

I found a large purulent ulcer of the serpiginous type. The condition was so typical that I immediately classed it as an ulcer due to pneumococcus infection and prescribed antiseptics and cauterization of the ulcer, thus you will notice departing from my rule of having a culture taken before starting treatment. The ulcer continued to spread rapidly, so that in 48 hours I felt there must be something lacking either or

both in diagnosis and treatment. Whereupon I had a culture taken; and, to my own surprise and that of the pathologist Dr. McKee, he found the Morax-Axenfeld diplobacillus. The treatment was immediately changed and the solutions of zinc sulphate substituted for the antiseptic lotions. The change within 24 hours was marked and the progress thereafter towards recovery was very rapid. I have cited this case in full in order to impress both the importance of the bacterial examination of these ocular conditions, and also its value as indicating the proper treatment.

The metallic salts break up in the conjunctival sac, and act by precipitating the albuminates which agglutinate the enzymes and active agents of the inflammation, the freed acid of the salt thereupon exerting its caustic action.

It is interesting to note that this bacillus maintains its virulence in cultures up to the seventh generation. The diplo-bacillus enters the eye either from the air in a dried or fluid form, or by actual contact; it has been found in the posterior chambers of the nose, whither it may have come from the eye by way of the tear duct. On the other hand there is a possibility of its spreading in the opposite direction from the nose to the eye; this diplo-bacillus retains its activity and power of reproduction after being dried surrounded by a sheath of mucous, which prevents it from really being absolutely dried up. The presence of this germ and its attendent inflammation have been frequently reported in Europe, and its occurrence has been noted a few times in the United States; but as far as I am aware its first definite appearance in Canada has been noted in my clinic at the General Hospital by Dr. S. H. McKee. The disease is by no means a new one but the bacterial cause had not been traced until lately.

Under the microscope you will find several specimens, also a culture on blood-serum of Morax-Axenfeld bacillus. After 48 hours in incubator it forms little pits which later coalesce and liquefy.

We have another type of conjunctivitis frequently associated with infiltrations of the cornea, which take on a malignant type, and develop the above mentioned serpiginous ulcer; later on it may be complicated by iritis. The conjunctiva is at first slightly rose red, this is rapidly followed by great swelling and even by the formation of a croupous membrane on the inner surface of the lid; the secretion is watery; and very frequently there are small hæmorrhages; it is especially found amongst young children and young adults; it occurs in epidemics; it is contagious. The germ is found to be a diplo-bacillus lanceolatus, or pneumococcus, as it is sometimes called; they are lanceolate in shape and

tend to form short chains, which with some other points suggest a similarity to the streptococcus family. The treatment of this condition is active antiseptics, and the application of the Galvano-cautery to the ulcer.

Of the purulent types of conjunctivitis that exist, that caused by the gonococcus is the one most frequently met with and most disastrous in its results; it is extremely contagious but the proportion of individuals suffering from gonorrhœa, who develop gonorrhœal conjunctivitis is comparatively small. This comparative freedom from ocular complications in gonorrhœa is very suggestive to any one having much to do with the disease. It would almost appear as if the gonorrhœa itself confers a certain degree of immunity. In addition the escape of the eye from this virulent infection must be partly due to the protection of the lids and the washing away of the secretion by the tears. It would appear as if the resisting power of the individual has a good deal to do with the severity of the disease, since in many cases which have come under my notice I have found that the proportion of gonococci present bears no definite relation to the severity of the disease. Many of the worst cases I have seen showed under the microscope but a few gonococci, whilst in others in which the disease ran what we might call a benign course, great quantities of gonococci were present. It is needless for me to speak about the characteristics of this well-known germ, but there is one point I wish to impress upon you and that is the fact that the gonococcus is capable of invading the intact corneal epithelium, whenever the pus is allowed to stagnate in the eye, hence the great importance in treatment of a very complete and frequent irrigation of the conjunctival sac.

I have found gonococci in the sac many days after the cessation of the discharge, which points to the necessity of continuing the treatment for some time after the apparent cure.

In this connection I wish to draw your attention to an interesting form of conjunctivitis, of gonorrheal origin, but in which the infection is endogenous, and is frequently associated with iritis. The inflammation as a rule occurs about the period of the appearance of the joint complication of gonorrhœa. As you know the gonococci are carried by the blood stream to the joints and there set up inflammation, and the same type of inflammation may occur in the eyes. It is an irritable form of conjunctivitis; the secretion is watery and has a tendency to chronicity and to relapses. No gonococci are found in the secretions of the eye although they may be present in the tissues; there is considerable pain and photophobia. The local treatment must be mild,

and if there be any urethral trouble present it, of course, must be attended to. The iritis that occurs in these cases possesses also the same tendency to relapses, but I have found that this tendency diminishes greatly with the improvement of the urethral condition. This form of gonorrhœal eye trouble may be considered a sort of general toxœmia manifesting itself in some weak spots. In cases of gonorrhœal conjunctivitis we sometimes get a mixed infection, streptococci and pneumococci being present, and it would appear as though the presence of the streptococci favours an increased severity of the infection.

Membranous conjunctivitis is happily of rare occurrence, at any rate the true diphtheritic type, in fact during my career in Montreal I have not come across a true case of this (although I have seen many cases of membranous conjunctivitis). A few I have seen on the continent of Europe. The severe cases of membranous conjunctivitis which I have met with were at first very suggestive of true diphtheria, but on close investigation they proved to be due either to that allied germ the bacillus xerosis or to staphylococci.

As being of interest in this connexion I might cite a case of my own which I saw not very long ago. The patent was an infant about nine months old, and suddenly developed an intense inflammation in the right eye, a gray membrane formed over the palpebral conjunctiva which could be rubbed off, but left a gray surface beneath it; there was great swelling of the lids; a smear showed a bacillus which was at first considered to be the Klebs-Lœffler diphtheria bacillus. The culture, however, the next day showed this not to be the true Klebs-Lœffler, but like the allied bacillus xerosis (of which I will have a word to say to you later on). There were also straphylococci present. The treatment of this case was simple, the use of argyrol 20 per cent. strength, and mild boric acid lotions. Recovery took place in about three weeks. I will not detain you with any details in regard to the diphtheria-bacillus; but I wish to say a few words in connexion with that very puzzling type of germ the xerosis-bacillus which I found in the above case. This germ is found very frequently in the normal conjunctiva, so that it would appear there must be a predisposition on the part of the patient before it can exert any malign action. Little is known of its true nature and action; it is identical morphologically with the diphtheria-bacillus. It is stained by ordinary analine dyes, and grows on the same culture media forming similar colonies. It is different from the diphtheria-bacillus in not producing an acid reaction in neutral peptone bouillon. Frankel regarded it as a non-virulent diphtheria bacillus which may become virulent when mixed with staphylococci;

others regarded it as simply the non-virulent stage of the diphtheria-bacillus.

A year ago a case of that comparatively rare disease known as Parinaud's conjunctivitis was treated by me. The characteristics of the disease are the huge granulations which develop on the palpebral conjunctiva; these rapidly increase in size; there is also enlargement of the pre-auricular, infra-maxillary and cervical glands. There is a rising temperature, but the course of the disease which is not rapid tends gradually to complete resolution. An elaborate bacteriological examination and report was made by Dr. John McCrae, pathologist at that time to the General Hospital. Pure cultures of a bacillus resembling the Klebs-Lœffler was found during 25 days of active treatment of the eye. This bacillus was not found in the other eye nor in the nose or throat. This bacillus gradually disappeared with the recovery of the eye. It would thus appear that, in this case we were dealing with either a virulent form of bacillus xerosis or else a less toxic than ordinary bacillus diphtheriæ.

dency to form chains, that is, as it were, revering to the streptococcus which I thought might be of interest and value to you. There is no doubt in regard to all these germs that whenever they develop a tendency to form chains, that is, as it were, reverting to the streptococcus type, there is a coincident increase of virulence.

In addition to all that I have told you, it is hardly necessary that I should insist upon your not losing sight of one great point, the fact that the eye is part of the whole bodily mechanism, and that in the local treatment of any eye condition one must not lose sight of the general constitutional state. It is a truism that if the general physical condition is lowered there is a corresponding lowering of resistance to all forms of infection, and this holds true as much in eye lesions as in general constitutional disturbances. A close attention is demanded to general hygiene, fresh air and cleanliness, both local and general, and proper dieting.

The second portion of my address I desire to devote to a consideration of the functional light perception of the eye and to the diagnostic value of it. This is a symptom which is as a rule but scantily described in the text books, yet it is nevertheless one of much importance in the differential diagnosis of certain eye diseases.

What is of much importance is that the said eye diseases are generally of constitutional origin, or secondary to serious trouble elsewhere. Many a time I have wondered if it were not possible to discover some symptom which would be of value as a hint of intra-ocular trouble,

in cases, in which from some reason or other an ophthalmoscopic examination cannot be made. To examine the eye thoroughly with the ophthalmoscope demands continued practice, and very few general practitioners are able to do this, hence it is under these conditions that a symptom roughly pointing to fundus trouble of the eye may be of use. As an example of the value of this, I may mention one case out of many which have come under my observation. The patient was referred to me by the family practitioner in order to have the refraction tested. The symptoms calling for this being headache and diminution of the visual acuteness. On proceeding to examine the patient I found that there was marked nephritic retinitis. This ocular condition is as you know associated with chronic varieties of nephritis in which the general symptoms are occasionally not very pronounced, hence failing an ophthalmoscopic examination of the eye the mistake might be considered possible. It is just in such cases as this that an examination of the light perception, even roughly made, would serve as an indication to the physician of a retinal change being the cause of the eye symptoms, and would call his attention to the desirability of a thorough physical examination.

1. In examining the light sense there are two points which call for consideration, the first being the minimum amount of illumination which will give rise to the sensation of light; and secondly the smallest difference between two degrees of illumination which it is possible for the patient to perceive. The simplest method of testing the minimum light perception is to diminish the illumination of our card of test types, until it just begins to affect our own visual acuity (taking for granted that our own eye is normal). We can then observe whether there is a corresponding or greater diminution in the visual acuity of the patient. In order to test the light difference we use what is known as Bjerrum's or De-Wecker's photometric test types, which I here show you, which consist of Snellens types printed white on gray. The contrast between the letter and its back ground, as you will see, gradually diminish as we descend the board. There is a fraction marked at the end of each line, which will give you an approximate idea of the value of the light difference in any case. The result, of course, cannot be mathematically accurate, but can be approximately enough correct for practical purposes. The main difficulty in these tests is the variation of perceptive power of the retina, occasioned by the state of so-called adaptation. For instance an eye which has been in the dark for sometime is extremely more sensitive to light than one that has been exposed to strong daylight. We can, however, compare our own light perception with that of the

patients, presupposing our own eyes are in an approximately normal condition. The diminution of the light perception is mainly caused by a pathological change in the outer or pigmentary layer of the retina, which layer goes by the name of photochemical apparatus of the eye. Whilst a diminished value of the light difference perception is most marked in lesions affecting the optic nerve, in retinal and choroidal lesions the light minimum is greatly reduced as a rule, and the light difference is but very slightly affected, hence a diminution of the light perception pointing as it does to a lesion of the retina or subjacent choroid (which latter as you know is the nutritive supply for the outer layers of the retina) directs the attention to the possible cause of such a lesion. Now the main causes of the retinal conditions are certain toxæmic constitutional states, and your attention being drawn to this fact you would institute a thorough general examination of the patient. The nephritic type of retinitis is the one most frequently met with, and as you know the prognosis is extremely grave, the patient's life rarely being prolonged 18 months after the eye lesions are demonstrated.

Next to this we have a diabetic type of retinitis in which we have the same failure of the light perception, but in which the prognosis is not nearly so grave; further, there are the syphilitic types, some of them associated with circumscribed exudations in the choroid and retina, which are characterized also by the distortion of objects looked at, due to the exudate forcing the cones of the retina apart, or by its contraction crowding them together. Another point in the diagnosis of these cases is that the perception of colours is changed, the appreciation of blue being first lost, and this is in marked contradistinction to the failure of vision due to true nerve lesions, in which green is the first colour to disappear. I may mention here as an interesting contrast to these conditions that in cases of hysterical amblyopia you will frequently find the vision is improved under diminished illumination. As to the diminution of the power of appreciation between various degrees of illumination, this condition is most marked in cases of optic atrophy, and would be of value thus to you in the differential diagnosis between lesions purely affecting the retina and those of the optic nerve. I will not dilate here upon the visual field and its indications, but I think I have said enough to draw your attention to a simple differential diagnostic symptom which cannot but be of use to you.

2. We must not be in a hurry to consider all cases of headache and diminished vision as due to a refractive error.

3. In neuresthenic individuals there is a marked susceptibility to any peripheral irritation, so that a very slight error of refraction may give

rise to marked symptoms, such as pain and headaches; while in the case of calm phlegmatic individuals a comparatively high error may cause little or no trouble. The same holds true, of course, in the well-known category of ocular muscular insufficiencies; for, given a slight error in any case there is a more determined and continuous effort to overcome it, with the production of a corresponding fatigue, whilst in high degrees of the same trouble, there being an utter inability to overcome it, the patient makes no attempt to do so and accordingly escapes the trials of asthenopia. I feel obliged in this connexion to speak rather strongly against the custom of allowing opticians to correct refractive errors. If there be any astigmatism present, which is likely in the majority of cases, the proper correction of it is virtually impossible without the use of mydratics. Again, especially in cases of myopia of high degree, there are not infrequently marked retinal changes, which unless properly looked after tend to become worse and end in partial blindness. Many cases occur in which an apparent error of refraction is simply an indication of severe fundal and constitutional trouble, and one I may mention which having seen but the other day is comparatively fresh in my memory and is of interest for two reasons. This lady had been wearing lenses prescribed for her by an optician, which had been changed from time to time during the past year, until latterly marked myopia began to develop. On examining her eyes, I found the light perception greatly diminished; there were some fine opacities in the lens; there were also some fine retinal changes which had evidently been in existence for sometime. Further examination of the urine revealed the presence of marked diabetes. This case is also interesting as an example of the value of the light sense test.

In the words of Hilton Fagge, diabetes being a derangement of the chemical labour of nutrition, you can readily understand how the eye must suffer. The retinal affection in its earliest stages evidencing itself by the alteration of the light sense, and the myopia being as a rule due to the opacities of the lens altering its refractive power.

Astigmatism in its many forms is without doubt the cause of both local and systemic disturbances; bearing this in mind and recognising the fact that only accurate correction is of any value it must be self evident to you that no optician is competent to perform this work. In the words of Maitland Ramsey you have to remember that the eye is not only in the body but of the body.

LEAD POISONING: A STUDY OF FORTY CASES.

BY

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During the past ten years upwards of forty patients suffering from the different forms of plumbism have sought relief in the wards of the Royal Victoria Hospital. The majority of these cases have been seen with Dr. Stewart and Dr. C. F. Martin, to whom I am indebted for permission to use the reports of such cases as were admitted to them, while the remainder have been under my own care.

A study of forty selected cases has been made with the object of placing on record several interesting features of lead poisoning observed during this time, thus offering a small contribution to the knowledge of a very important and happily comparatively rare form of toxæmia, which threatens a large proportion of the artizan class of all great cities and which, as our cases will show, falls as well upon those not thus legitimately exposed.

With but one exception, the patients were all from the city of Montreal or the immediate vicinity, and ranged from five years to seventy-five years of age. The following table shows the grouping:—

4 under 10 years.
3 from 10 to 20 years.
14 from 20 to 30 years.
15 from 30 to 50 years.
4 from 60 to 75 years.

Of those under ten years, two were five years of age and two were of six and seven years. About 75% of our cases were found in those between 20 and 50 years,—the active years of life. While females are regarded by most authorities as more susceptible than males to the poisonous effects of lead, the figures expressing this relation in so small a series as ours can scarcely be regarded as of much import. Twenty-six of the cases analyzed were men and boys while fourteen were women. There are other factors, however, to be considered more potent perhaps than natural susceptibility, for example, the comparatively infrequent exposure to the poison experienced by women. Then again uncleanly habits and alcoholism which appear largely to determine plumbism in those exposed, are conditions not so common in women as men. When, however, allowance is made for all these factors, there remains sufficiently convincing evidence for the greater susceptibility of the female, alike of the human species and the lower animals.

Read before the Canadian Medical Association.

The study of the habits of the patients with respect to alcohol and cleanliness was most unsatisfactory. Nineteen admitted the alcohol habit, (we realize that this evidence is unreliable). A few (3 or 4) acknowledged excessive drinking. In one instance the patient stated that he "drank occasionally." His wife told another and doubtless a true story of "heavy drinking" and of his being "often drunk." But few of the adults would admit uncleanly habits, but if one may judge in this relation from the condition of the mouth, there were few who were not unclean.

Fifty-five per cent of the patients were working directly with lead as painters and manufacturers of paint, plumbers and glass blowers. The remainder acquired the poison from other sources.

The following table shows the occupations:—

Painters, 14; in paint factories, 6; plumbers, 1; glass blowers, 1; Childen, 6; housekeepers, 6; labourers, 2; silk weaver, 1; cabinetmaker, 1; butcher, 1; not stated, 1.

One of those who worked in a paint factory was employed as a cooper. The cans containing paint were packed and shipped in barrels in which the white lead was received at the factory, and the patient stated that in closing up these barrels a great deal of dust was raised in the air. While the hands and mouth may have been thus contaminated yet a favourable opportunity offered for inhaling a considerable quantity of the fine dust floating in the air. In this case the patient's history clearly suggests that the poison entered the system by way of the respiratory tract.

An interesting observation in this connection was made upon a family, four members of which were variously influenced by lead, two of whom succumbed to poisoning of the cerebral type. The family consisted of six, two adults and four children. The father had forsaken his wife, leaving her well nigh penniless to face a rigorous winter with her bed-ridden mother of 75 years, and her four young sons dependent upon her. The two older sons were able to do some work, and were out in the city most of the time. The other sons, aged six and eight years were constantly at home. The mother kept a little candy store in the front of the mean tenement of three rooms in which they lived. The whole family slept in one room, while the other room served as their kitchen and general living room. The fuel for the broken stove, which served the double purpose of cooking their food and heating their rooms, consisted largely of barrel staves, gathered from a neighbouring paint factory by one of the smaller boys and broken up in the house. To make a long and not uninteresting story short, four of this family fell

ill, and one after the other, they were brought into the hospital. Two of them, the mother and grand-mother died with saturnine encephalopathy, of the most acute and pronounced type. The liver of one showing evidence of lead in sufficient quantities to render the diagnosis clear even in the absence of other evidence. One of the boys who were at home almost all the time, presented the symptoms and signs of the neuromuscular type, while the other had but little beyond the gastro-intestinal features of the toxæmia. Beyond slight anæmia, the other boys, out all day, showed no signs of poisoning.

In the case of another housekeeper, the wife of a plumber, it was thought that as her husband kept his lead tubes in the pantry and did some of his work in the house there was a possible chance for poisoning to take place, but it was not clear just how it occurred. The silk weaver, a young woman aged 27, had for several years been using silk threads of various colours, but chiefly those of yellow colour. It was her habit to bite the thread and in this way it was thought she absorbed small quantities of lead chromate. One of the children in our series, a boy of five years, played in his father's paint shop. The butcher used hair dye for his head and moustache, and this possibly was the source of his poisoning. Among those classified under painters is one, an hotel keeper, who unaccustomed to painting, did such work for a few days about his premises and developed the gastro-intestinal type of the disease with the blue line on the gums and the basophile granules well marked in the red blood cells. A housewife addicted to drink used lead acetate as a vaginal douche and developed a grave form of the poisoning. (This, however, is regarded as a doubtful source of the poisoning). There were no cases traceable to drinking water.

Most of our patients (28) were admitted in the first attack. In four cases there had been one previous attack; in two, two: in one, three: in two, four, and in one, five. One had been chronically ill for four or five years, and in another no statement upon this point could be found in the records.

The season of the year when lead poisoning is most common has been commented upon by several writers. Sometimes the warmest months show the largest numbers of cases while the greater frequency of lead colic on board ship is found when those accustomed to northern latitudes cruise in the tropics. Oliver believes, however, that the season of the year has but little to do with the occurrence of the poisoning. It is now somewhat more than ten years, since the first of these lead cases was observed and it is found that in this time fifty per cent of the total number were under observation in the months of November, December,

January and February, while forty per cent found their way to the hospital in the two severest winter months.

January 8, February 8, March 0, April 5, May 3, June 6, July 4, August 0, September 0, October 2, November 2, December 2, total 40.

The mouth in the majority of the patients was foul and the teeth frequently found in a bad state. The blue line was present in thirty cases and "suspected" in two. Thus in seventy-five per cent it was present. There was not even a suggestion of the line in two cases. In five cases no note was made of it. Special care was taken to distinguish between the line so often found at the edge of the gums upon the teeth which are poorly cared for and the characteristic dark blue line, granular in appearance in the gums. In examining painters and those engaged in a paint factory, it is not common to see this line well developed in those who have never had cause to complain of lead poisoning.

The blood of eighteen patients was examined in the ordinary way and stained specimens were made from twelve of these. The accompanying table shows the results.

Red.	White.	Hæmoglobin.	Basophile granules.
3,480,000	8,000	35%	Not examined.
4,470,000	8,000	48	do
3,500,000	10,000	57	do
3,690,000	19,600	53	do
3,090,000	6,800	42	do
1,880,000	10,000	55	Present.
2,880,000	12,000	58	Present.
3,441,000	not stated	50	Present.
2,500,000	4,000	40	Present.
4,000,000	8,600	70	Present.
4,660,000	17,600	70	Present.
3,610,000	10,500	60	Present.
3,240,000	6,000	76	Present.
3,280,000	11,600	85	Present.
2,680,000	11,000	65	Present.
4,480,000	11,400	47	Present.
Not counted.	14,000	55	Present.

An examination of this table shows that twelve cases conform fairly well to the chlorotic type of anæmia. A definite and in some instances a rather high (19,600) leucocyte count is seen. In ten out of the total number of cases in which a blood examination was made, one may say

that a leucocytosis is present, i.e. in 55 per cent. Only within the last two years have we looked for the basophile granules which were recognized by many observers before the work of Grawitz and Hamel, but perhaps never so carefully defined until their articles appeared in 1900. These observers, with others since, have established the relation between lead intoxication and the presence of these granules in the red corpuscules. In our experience in the Royal Victoria Hospital in no case of lead poisoning has our search for them been in vain, and they are extremely rare in any other anæmia.

All the general types of plumbism have been found among the patients, while a few of the so-called special types are also represented. By special types is meant lead poisoning in children; the type suggesting a wide spread multiple neuritis; the Aran-Duchenne type simulating chronic anterior poliomyelitis and the brachial and anti-brachial types as well.

The cases fall under the following heads:—

Gastro-intestinal	18
Neuro-muscular	11
Cerebral	10
Chronic toxæmia with arthralgia and profound anæmia of the pernicious type	1
Total	40

Perhaps the most interest clusters about the cerebral group. Ten of our patients were afflicted with "saturnine encephalopathy" and in this group were found the majority of fatal cases. Nine of these cerebral cases are typical, while the tenth presented certain features which lead one to suspect a central lesion antedating the lead intoxication. He was a boy aged seven, who had not walked until three years of age and had never been strong, and throughout his life had been a sufferer from headache. Three months before coming into the hospital he had a general convulsive seizure and afterward his left side was paralyzed and the patient was unable to walk. When seen in the hospital the left arm was paralyzed, the fingers slightly flexed and the wrist flexed on the forearm. He had several convulsions and the spasmodic movements were more marked upon the left side. He died with a diagnosis of saturnine encephalopathy, having the pallor and the blue line characteristically marked. It was thought that this case might illustrate an observation which one finds in some of the German books on cerebral plumbism,—to the effect that at times the poisoning with lead serves

but to accentuate or aggravate a cause or a condition already there. In this case one may reasonably think upon cerebral cyst or tumor, such as v. Jaksch has described.

The mode of onset in these cases showing central nerve disturbances is variable. In some instances warnings of the poison have come in colic or headache or general weakness. Gradual failure of vision was the first symptom noticed by one patient; weakness and nervousness and inability to walk, with a sudden epileptiform seizure marked the onset of two cases. Headache and semi-stuporous state were found in another. Three had the convulsive seizures first, in the midst of alcoholic excesses; and in two of three cases for a time the picture might well have been that of alcoholism with delirium tremens.

In two of these cases, lumbar puncture was done with the hope of relieving the intracranial pressure, if such existed, and at the same time, to secure some fluid to make yet another test for lead. We may say that no change in the symptoms was manifest in either case after the puncture. In the fluid from one patient no lead was discovered, while the same test applied to that from the other yielded positive results.

Lead poisoning in children has attracted considerable attention, no doubt because of its comparative infrequency as well as its variation from the rule in adults, in whom the neuro-muscular type develops. Putnam has suggested that the more active process of elimination in childhood might explain the rarity of plumbism in the early years of life. In our series there were six under fifteen years of age, four of whom were under ten. Thus fifteen per cent of our patients were children. The blue line was found on the gums of five of these patients. The neuro-muscular type of lead intoxication when developed in children has been found to implicate the muscles of the legs much more than the arms, and in some instances without any wrist drop, whatever. Three of our cases illustrate the correctness of this teaching.

1. R. L., aged twelve (3379), had a double foot drop, and a partial double wrist drop. He was able to extend the wrists but feebly. The extensor muscles of the wrists and hands were all weak, but the brunt of the poison seemed to have fallen upon the tibialis anticus and peronei muscles which are powerless. The leg muscles gave a doubtful reaction to faradism. The progress of the case was slow and tedious. After thirty-eight days in the hospital he went out improved.

2. C. F., aged five (1201). Three weeks before coming to the hospital his parents noticed the little fellow dragging his toes. Then his foot dropped and the steppage gait developed. His feet turned inwards and very soon he was quite unable to walk or stand. The

glutei and tensor vaginæ femoris muscles and to a less extent, so far as one could judge, the erector spinæ groups were atrophied. There was no sign of atrophy in the muscles of the upper extremities. He remained in the hospital for ninety-six days and was much improved.

3. W. O'B., aged six (8587). In this patient the extensors of the fingers were weak, while those of the wrists were fairly strong. The legs were thin and wasted and drawn up, the legs upon the thighs, and the thighs upon the abdomen. So much pain was induced on attempting to examine the muscles that it was impossible to investigate the strength of the different groups. He lay for several weeks without making any attempt to stand, but after gradually regaining this power he soon began to walk and during his stay of 140 days in the hospital he was changed from an irritable whining helpless heap on his bed to a tractable good-natured active boy. In two other children where the cerebral and gastro-intestinal types developed, the nerves and muscles were practically free. In two young men, however, having the the cerebral features of the intoxication, there was paresis of the lower extremities in each case.

Types studied more in detail.

1. The neuro muscular type. (1831, 630, 2700).

Under this group there are eleven cases. Three of them were of the upper arm or of the Duchenne-Erb type with paralysis of the deltoid, triceps, brachialis anticus and supinator longus. In one of these, a painter (1831), the muscles of the right shoulder were markedly wasted, especially the supra and infra-spinators. The lower arms were involved, but to a less extent. In this connection it is interesting to note that the patient before coming under treatment had suffered with one or two convulsive seizures. Seven of these under this group were more distinctly of the lower arm type.

There was a unilateral wrist drop in but one case. There was, in this case (1132) also well marked arthritis, and the joints of the upper and lower extremities were especially involved. Paralysis of the left arm was noticed in a child (1791) of seven years who had always been rather backward. The paralysis followed recurring convulsions. The supinator longus has been found implicated in all those of the upper arm type, and definitely in one of the lower arm type. (1124).

Another case, which we have seen fit to classify under chronic lead toxæmia, may be profitably and briefly outlined. We have already spoken of her as a silk-weaver and remarked upon the source of the poison. When she came under observation she had been ill for four years. The onset was marked by epigastric pain and vomiting after

food. Then pains in the upper arms and in the joints of the upper extremities developed. The smaller joints of the hand became swollen, red and painful. Arthralgia and muscular wasting were both severe and extensive.

With variable severity and at irregular intervals for four years, the same attack was undergone, and at one of these when her lower extremities became implicated, the great toe was the seat of the most acute reaction. She suffered from severe persistent occipital headache; and what with gastric disturbances and muscular weakness and pain, she was almost helpless.

There were no tophi, and sensation was normal, although at times numbness was complained of. Deglutition was difficult at one time. Besides the general wasting there was marked atrophy of the extensors of the wrist and of the small muscles of the hands, the interossei and the muscles of the thenar and hypothenar eminences. The hands took on a claw-like appearance and suggested the condition found in chronic anterior poliomyelitis, or a wide-spread multiple neuritis.

Albuminuria was present in fifty per cent (20), of the patients. Casts were found in the urine of forty per cent (16) of the patients. Albuminuria and no casts in about ten per cent of cases, while casts without albuminuria were noticed in but one instance. The urine was examined for lead in but a small proportion of the cases. In eight patients, examined during the last year, the metal was detected seven times. In all we may say that lead was discovered 12 times in our series, but such a statement does not indicate the frequency of lead in the urine.

The eyes in fifteen cases reported upon were in the majority normal; and when changes were present they varied from mere muscular weakness to neuro-retinitis and optic atrophy. The very important manifestations of lead poisoning found in the eye, we must leave to the specialist to discuss.

The diagnosis of the majority of these cases has been a very easy matter. Two of the cerebral cases were in the hospital for so short a time and the history up to the time of their death was so shrouded in obscurity that only after another patient came from the same house was a diagnosis clear. So much diagnostic importance now attaches to the finding of the basophile granules in the red blood cells, in obscure cases of coma that we may be better able in the future to get a clue from this simple method of investigation. Cholecystitis was the diagnosis in one case during the first day in the ward. Appendicitis has been suspected in but few instances. One can readily understand the difficulties that

might arise here. A case of plumbism may be complicated with appendicitis. Indeed a recent writer suggests that plumbism is one of the indirect causes of appendicitis, due, he says, to the drastic purgatives given to overcome the obstinate constipation which results from lead poisoning. Inflammatory conditions such as one finds in appendicitis are at first sight suggested by the leucocytosis found should one examine the blood. But it must be borne in mind, as we have shown, that leucocytosis of a considerable degree and even fever may be found in the intoxication attributable to lead.

Hysteria is most difficult of exclusion. This was the case in one of our cerebral patients, who after recovering from several convulsive seizures had a paralysis of the right side which disappeared rather suddenly after a few weeks.

Delirium, not distinguishable from that due to alcoholic excess, was present in two fatal adult cases, colouring the true picture of saturnine encephalopathy. So many of those in whom plumbism develops are addicted to drink that this is not a cause for surprise. But the course of the case usually soon decides the diagnosis.

Six of the forty patients died—a mortality of fifteen per cent. In this list there were three women aged 31, 41 and 75 years; two men aged 25 and 28 years and a child of seven years, already referred to in remarks upon the cerebral cases. There was but one patient a man of 28, presenting the neuro-muscular symptoms. He was admitted in his third attack of plumbism. He was very weak and anæmic with signs of nephritis. He died without convulsive seizures. The others in this fatal group succumbed during severe seizures. In two cases, the status epilepticus existed for several hours previous to death.

The treatment in practically all cases has been the same. Iodide of potassium, magnesium sulphate and other purgatives, with strychnine and iron, hot packs and electricity as indicated.

Autopsies have been done upon four bodies, but up to the present nothing has been made out beyond the presence of lead in the brain of one case (the only brain examined, and in this case no lead had been found in the cerebrospinal fluid) and in the liver of three cases. In two cases interstitial nephritis was discovered.

In closing this review of the cases treated in one of our hospitals in Montreal, it may be of some interest to review, from the standpoint of prevalence only, the subject of lead intoxication in that city and to ascertain whether more cases are found in recent years than formerly. Statistics on this point are not forthcoming. To get information from medical practitioners, were it available, would be a tiresome task. The

City Health Board takes notice only of those cases resulting in death, and the record of even these is made with those of deaths due to other poisons. Hence an appeal to this source is useless.

It occurred to me that an examination of the reports of the various hospitals in the city would afford some information—in fact the only information available upon this question—and from the number of cases therein reported, one could judge of the prevalence or frequency of such cases of poisoning and by comparison readily determine whether there was an increase or not in these numbers in recent years.

By combining the figures from the Notre Dame, the Montreal General and the Royal Victoria Hospitals from 1886 to 1904, eighteen years, one finds 204 cases of lead poisoning with ten fatal cases, or a mortality of about five per cent. This number in comparison with the total number of patients treated at these institutions, during this time, is proportionately small.

In 1891 one first finds the hospital reports such that one is able to distinguish the number of lead from other cases of poisoning. Starting then with that date we have included for the sake of comparison, the present year 1905 in our report allowing for the current year a number even above the average for the past four years. We thus have three five year periods for comparison and the following table shows the number of cases in each period:—

1891 to 1895 (inclusive), 60 cases; 1896 to 1900 (inclusive), 80 cases; 1901 to 1905 (inclusive), 49 cases.

It appears from this evidence, at least, and one must admit it is fairly reliable, that cases of plumbism in Montreal are less numerous than heretofore and when we considers this fact in relation to the increase of population, and the marked extension of our industrial work the showing is most satisfactory.

I wish to record my deep indebtedness to Dr. James Stewart and Dr. Martin for permission to use their cases: to Dr. Bruère for his invaluable services in making the tests for lead in the fluids and tissues; and to Drs. McKechnie, Lincoln and Moffat, house physicians, for assistance in looking over the record of our cases.

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TYPHOIDAL PERFORATIONS.

BY

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It is now more than twenty years since Leyden first recommended and Mickulicz carried out the operative treatment of typhoid perforation. In America since attention was drawn to this method by J. C. Wilson in 1885 much has been written upon the subject. Every clinician is, of course, familiar with the ordinary signs which lead to a diagnosis of the condition and the exceptional cases are familiar to very many. No one will doubt, however, that in very many, if not in a majority of the cases, difficulties arise in determining with accuracy the initial symptoms and signs which call for operation.

It is a curious fact that in spite of all that has been written upon the need of differentiating the perforation from its associated peritonitis that the most recent text-books still give among the classical symptoms of perforation those which depend only on the peritonitis. Thus, for example, one finds the following in one of our accepted text-books:

(Read by title before the Canadian Medical Association, Halifax, 1905.)

"Perforation is usually announced by the sudden advent of acute pain in the abdomen quickly followed by the symptoms of collapse; and the fact that diffuse peritonitis following perforation, may develop insidiously must be remembered." And then follows a classical description of generalized advanced peritonitis. The statements made are, of course, quite in accord with facts; but there seems no idea of drawing attention to the difference between perforation signs and those of the subsequent peritonitis.

It is partly with this in view and from the fact that there have been abundant opportunities of observing these cases in our medical clinic that we have undertaken to analyze the cases occurring in the Royal Victoria Hospital during the past ten years.

Out of 1,230 cases of typhoid fever, perforation occurred in 32 or 2.6 per cent. Of these 32 cases, twenty submitted to operation and five recovered, giving a percentage of 25 per cent. recoveries among the operative cases. In the remaining cases operation was not performed either because the patients were moribund or the operation was refused or, again, because the condition was not recognized as such.

The age of the patient. The average age of this series was 24.4 years. The youngest patient was 4 years old and the oldest 56; so that these statistics bear out what is generally held that the age of the patient is of no importance in making the diagnosis.

So far as the *sex* is concerned it happened that 30 cases out of the 32 were males.

The exact time at which the diagnosis was decided upon, has not been carefully recorded in most cases, but the average time of operation after perforation was diagnosed was 15 hours in the cases that recovered, and 20 hours in the fatal cases.

The occurrence of the perforation after the onset of the disease was on the average about the 15th to 16th day. The earliest recorded case was on the 8th day and the latest on the 39th.

The Onset. The onset itself was usually sudden, and but rarely insidious.

Pain. By far the most important symptom of all was *sudden pain* and this was recorded in more than 84 per cent. of all cases; there was one instance in which this was indeed the only sign present and yet was so characteristic as to determine the advisability of operation. The perforation was found and the patient recovered.

There are so many conditions, however, which may bring on pain that often the difficulties in diagnosis are very great. Miclescu has enumerated a few of these as follows:—fæcal accumulations, peri-

TYPHOID PERFORATIONS

Case Number.	Initials.	Age.	Sex.	Day of Disease.	PAIN: Degree of Pain.	PAIN: Recurrence and Severity.	PAIN: Diffuse	PAIN: Localization	ABDOMEN: Rigidity: Presence	ABDOMEN: Rigidity: Time after event.	ABDOMEN: Rigidity: Locality.	ABDOMEN: Tenderness: Locality.	ABDOMEN: Percussion: Flanks	ABDOMEN: Percussion: Liver.	GENERAL CONDITION: Facies.	Time	Pulse.	Time	Temperature	Time	Respirations.	Time	Rectal examination	Vomiting	Time.	Blood Counts	Result
8020	J. C.	16	M	19	Severe.	Severe paroxysms.	x	[illegible] above pubes	Moderate.	3¾ hrs	Diffuse	Diffuse.					No change.		No change.		Increased.	3				7.200, 8,000, 7,200	Recovery
8146	X. L.	31	M	9	Moderate.	Continuous.	x	[illegible] most	Slight.	?	Diffuse.	Diffuse.	Tmypanitic.	Diminished.	Hippocratic.	?	Increased.	1	Drop.	1	Increased	1		Present.	?	6,900, 7,000, 4,500, 6,400.	Death.
8247	W. T.	28	M	23	Severe.	Severe paroxysms.	x	[illegible] pubes	Marked.	10 hrs.	Diffuse.	Left lower quadrant.	Tympanitic.		Hippocratic.	?	No change.		No change.		No change.		Negative			6,500.	Death.
8336	D. G.	22	M	27	Severe.		x		Marked.	?	Diffuse.	Diffuse.	Tympanitic.	Absent.			Increased.	6	Drop.	?	Increased.	12		Present.	48	2,700.	Death
8604	W. P.	4	M	20	Severe.		x		Slight.	7 hrs.	Diffuse.	Diffuse.	Tympanitic.	Absent.			No change.		No change.		No change.		Tender and full.	Present.	Onset	8,600.	Death.
9043	A. McP.	23	M	20	Severe.	Increased by breathing	x					Diffuse, right most.			Anxious.		Increased.	2	Rise.	2	Increased.	2				8,400, 10,000.	Recovery.
9157	D. H.	23	M	28	Severe.	Recurred 13 hours.		Lower abdomen.	Marked.	2½ hrs.	Diffuse.	Diffuse.	Dull.				Increased.	2	Drop.	2	Increased.	2				9,000, 3,500.	Death.
9582	J. S.	39	M	20	Moderate.	Recurred 16 hours.	x					Diffuse.	Tympanitic.	Dull.	No change.		No change.		No change.		No change.		High tenderness.	Absent.		5,400, 6,800, 7,600, 6,400.	Death.
9598	A. P.	25	M.	18	Severe.	Recurred 2 hours.		Left lower quadrant.	Moderate.	5 hrs	Left lower quadrant.	Left lower quadrant.	Tympanitic.	Dull.	No change.		Increased.	11½	Rise.	11½	Slight increase	11½				9,000, 7,000, 9,000.	Recovery.
9639	J. C. S.	33	M.	39	Severe colic.	Recurred 4 hours		[illegible] quadrants	Moderate.	5 hrs	Lower quadrants.	Left lower quadrant.	Tympanitic.	Diminished.	Anxious.	8	Increased.	3	Rise.	3	Increased.	3	High tenderness			7,400, 7,600, 7,200.	Death.
109	G. M.	19	M.	17	Severe.		x	[illegible] most				Lower quadrants			Hippocratic.	11	Increased.	12	Drop.	5	Increased.	7		Present.	1		Death.
411	F. L.	16	M.	13	Severe.		x	L. lower quad most	Moderate,	12 hrs.	Diffuse	Diffuse.			Hippocratic.	?	Increased.	1	Drop.	2	Increased.	2					Death.
593	M. S.	8	F.	8	Severe.		x		Moderate.	?	Diffuse.	Diffuse.			Hippocratic.	?	No change.		No change.		Increased.			Present.	10		Death.
2603	W. P.	21	M.	34	Moderate.		x	Right side worst	Slight.	?	Diffuse.	Diffuse.	Tympanitic.	Tympanitic.	Hippocratic.	?	No change.		No change.		No change.						Death.
2606	B. K.	22	M.	23	Moderate	Recurred 4 hours.	x	Right side opp. navel	Slight.	4 hrs.	Right side.	Diffuse, right worst.		Tympanitic.			Increased.	6			Increased.	6					Death.
3285	J. M.	22	M.	11	Severe.	Gradual return.		Lower quadrants.	Moderate.	12 hrs.	Right side.	Lower quadrants.					Increased.	15	Grad. drop.		Increased.	3		Present.	3		Death
4924	H. T.	16	M.	14	Severe.			Lower quadrants.	Moderate.	6 hrs.	Diffuse.	Diffuse	Dull 6 hrs.	Diminished 6 hrs.			No change.		No change.		No change.						Death.
3645	H. T.	32	M.	11	Severe.			Epigastric.				Diffuse.					Increased.	?	Drop.	?	Increased.			Present.	?		Death.
4970	J. J.	18	M.	11	Moderate.	Recurred 12 hours.	x	Right lumbar chiefly.				Diffuse.					Increased.	5	Rise.	5	Increased.	5		Present.	Onset		Death.
5392	J. H. B.	8	M.	34	Severe.			Left lower quadrant.				Diffuse.			Hippocratic	24	Increased..	24	No change.		Increased.	24		Present.	24		Death.
5583	G. A.	28	M.	10	Severe			Right lower quadrant.	Slight.	12 hrs.	Diffuse.	Diffuse.	Tympanitic.	Dull.			Increased.	9	Rise.	?	Increased.	6		Present.	4	12,000, 12,000, 13,500, 33,000	Death.
6329	H. P.	21	M.	20	Severe.		x		Present.	24 hrs.	Lower quadrants.	Diffuse.					No change		No change.		No change.			Present.	24	4,200, 5,000, 4,600.	Death.
7104	F. F.	37	M.	12	Severe.	Recurred 4 hours.	x	Left side worst	Present.	4½ hrs.	Left lower quadrant.	Diffuse.					Increased.	12	Drop.	6	Increased.	12					Death.
7462	M. R.	29	M.	32	Severe.		x		Present.	6 hrs	Diffuse.	Diffuse.	Dull 6 hours	Dull.			Increased.	3	Rise.	5	Increased.	3				4,200, 6,800.	Death.
7785	E. H.	37	F.	20	Severe.		x										Increased.	Ons	No change.		Increased.	Ons		Present.	6		Death.
7829	J. P.	34	M.	14	Severe.		x		Present.	2 hrs.	Right lower quadrant	Above pubes.					No change.		No change.		No change.			Present.	2	9,200.	Death.
6265	W. C.	56	M.	19	Severe.		x		Present.	7 hrs.	Right lower quadrant.	Diffuse.		Dull.			Increased.	7	Grad. rise		Increased.	7				7,000.	Death..
5200	D. D.	8	M.	9	Severe.			Lower quadrants.	Present	?	Lower quadrants.	Diffuse.														18,000. 22,000, 25,000.	Recovery
5625	L. J.	23	M.	10	Severe.	Recurred 7 hours.		Lower quadrants.	Present.	18 hrs..	Diffuse.	Lower quadrants.	Dull 20 hrs.	Tympanitic 18 hrs.	Anxious.	18	Increased.	18	Drop.	10			Fullness.				Recovery.
7874	G. W	44	M.	26	Severe.	Recurred 24 hours.		Lower quadrants.	Present.	?	Diffuse.	Diffuse.											Tender and Full.	Present	Onset	7,500.	Death.
9401	J. L. S.	51	M.	10	Severe.	Contanuous.	x	Lower quads. worst	Present.	72 hrs.?	Diffuse.	Diffuse.	Tympanitic.	Tympanitic.	Hippocratic.	72	No change.		?		No change.					10,000.	Death.
3456	E. M.	24	M.	13	Severe.		x					Diffuse.					No change.		Drop.	6	No change.			Present.	7		Death.

typhlitis, injury to the gall-bladder from stone, appendicitis, gastric perforations, tuberculous intestines with perforation, pancreatitis, incarcerated hernia, ileus, peritonitis by continuity without perforation, rupture of the recti-abdominis, and ruptured mesenteric glands or spleen.

Sometimes during the course of typhoid fever there has been more or less constant pain and the difficulties in determining a diagnosis may be great. In one of our patients entering on the 8th day of disease there was a history of abdominal pain from the outset. On admission his abdomen was rigid and distended, there was slight general tenderness and tympanites. On the following day the patient had a slight hemorrhage. There was no alteration in the abdominal signs, except an obliteration of the liver dulness. The leucocytes numbered 5,000. On the following day the abdomen was softer but still somewhat tender, and on the 10th day was distended but not so tender. During the next three days the daily record showed a softer abdomen, still some tenderness, more to the left than the right, the liver dulness still absent, and the blood count normal. On the 16th day the patient had a chill, the abdomen was not so disteneded, but the patient's general condition became rapidly worse. Death occurred on the following day and the autopsy revealed a peritonitis of several days duration. Just when the perforation occurred in this case it seems impossible to say. The patient insisted from the first that the pain was no different from day to day, while there were but few variations in the tenderness. There is one feature, however, in the records which is worthy of note, viz., the abdomen is described on one day as being softer simultaneously with the development of a tympanitic note over the liver area. While under ordinary conditions but little value attaches to the obliteration of liver dulness, inasmuch as an ordinary distention of the colon may cause this dulness to disappear, yet in such cases there is marked distention of the abdomen and it can scarcely be described as soft. Where the tympanitic note is due to the presence of air in the peritoneal cavity there may or may not be distention; where distention exists, the obliteration is of little value as an aid to diagnosis. The *combination however of obliterated liver dulness and an undistended abdomen* is highly suggestive of the presence of air in the peritoneal cavity. Liver dulness was altered in 10 of our cases. The time of alteration as noted in four cases averaged 11 hours.

Pain is sometimes temporarily relieved either spontaneously or by treatment. In 3 of our series there was spontaneous subsidence of pain. Very often the use of hot fomentations or the administration of an enema gave relief for some hours (as in 10 of the 32 cases recorded),

and the diagnosis may thus be confused. The pain may not recur for many hours (in one case not for 24 hours), and the necessity of watching for developments may cause perhaps a serious delay.

Sometimes, again, the pain in perforation developed gradually and only afterwards became suddenly severe, doubtless from the breaking of temporary adhesions. And again the pain may be so gradual in its onset over many hours or days that confusion may reign.

It sometimes happens and it may be of importance in the diagnosis that pain increases with each respiration.

As regards the *location of the pain,* no district in the abdomen is exempt. In 21 of our cases it was diffuse. In only one was it localized to the epigastrium and in many, perhaps the majority, it was referred to the lower rather than the upper half of the abdomen. It was quite as frequent on the left side as on the right. Radiation of the pain was present in rather a peculiar way in 6 cases. In 4 towards the end of the penis and in 2 towards the rectum.

Tenderness. Tenderness was present at sometime or other in every case and it must be regarded as an early and important sign. Its position is recorded in 27 of our cases and there indicates a great variability in the location. It was diffuse in 18 cases and in the remaining was localized in different portions of the abdomen, chiefly the lower half. The degree of tenderness is recorded in 25 cases being marked in 15, and moderate in 10. An important point in regard to the tenderness is its relation to pain. The tenderness is usually where the pain is felt. It does not usually disappear even when the pain is gone. Pain and tenderness are the two most valuable signs.

Rigidity. Opinions differ widely as regards the importance of this sign in the earliest stages. According to Miclescu nine out of his ten cases showed early rigidity which he regards as nature's protection against the extension of trouble from the perforation. In our own cases it often appeared very late. It developed in 24 of the cases, was absent in several, slight in three, moderate in 18 and marked in 3. The average time of onset after the first signs of perforation was 12 hours in 18 of the cases. In 6 cases the time was doubtful. The earliest rigidity recorded was 2 hours after perforation and the latest 24. As regards location of the rigidity it may be general or local. Where local the rigidity was mostly in the lower quadrants, sometimes on the right and sometimes to the left. It seems, as a rule, that rigidity develops more, and more quickly where, at the onset, the tenderness is greatest.

At all events one may regard these three signs as of chief diagnostic

importance—pain, tenderness and rigidity, and all other aids while of some importance, occupy a role of secondary importance.

The other symptoms. Nausea and vomiting occur in a certain proportion of the cases, in our series in 46.8 per cent. It occurred at the onset in three cases; in others again only after 48 hours. The average for all cases was 10 hours after perforation. In eight of the cases it occurred before six hours.

Sweating is a late sign as a rule. It is recorded in only five of our cases and was then associated with the peritonitis. Hiccough was a late sign and occurred in only three of our series.

The chart cannot be said to give reliable evidence at a sufficiently early stage to be of value in deciding doubtful cases. The pulse, for example, is very often not altered at all till well on in disease. In ten of our series the pulse remained under a hundred until the time of operation; in four others it had always been rapid and when perforation occurred there was no further increase. Analysis of our cases in this respect shows that an increase does not begin as a rule until at least six and a half hours after perforation has occurred. In one case there was absolutely no alteration whatever after 24 hours.

The temperature is still more unreliable. In eight of our cases there was no change in temperature. In ten the temperature dropped though usually some hours after perforation had occurred, the average time being five hours. In seven cases the temperature rose, in four suddenly, and in three more gradually. In the remaining cases it was impossible to say whether or not any deviation in temperature was due to the perforation or whether on the other hand it could not be accounted for by the regular diurnal deviations or as the effect of hydrotherapy.

As regards the respiration there seems to be a fairly early increase in their rate. In 10 of our patients the increase was quite evident within three hours, and in 20 of the cases there was distinct increase within five hours. Eleven cases, however, showed no change whatsoever. There seems to be no ratio between the increase in the respiration and pulse inasmuch as there was sometimes increased respiratory rate without any alteration in the pulse and *vice versâ*.

Inspection of the patient is doubtless of some importance. According to some for example the facies lends some aid to the diagnosis. Yet this is unquestionably an unreliable feature. There is as a rule some evidence in the face expressive of anxiety or distress, but there are too many exceptions to this rule. The hippocratic facies, of course, develops late, is associated with peritonitis not with perforation and was found in our cases on an average later than 10 hours. There is some-

thing to be gained by an inspection of the abdomen more particularly when one observes an immobile abdomen with thoracic breathing.

Percussion of the abdomen, as an aid to the early diagnosis is in most cases considered to be of little value. Dulness in the flanks is not infrequently present without perforation and on the other hand it is frequently if not usually absent where perforation has taken place. It is therefore but a slight accessory aid in the diagnosis. In four of our cases dulness in the flanks was observed on an average of 10 hours. Liver dulness and its diagnostic importance have already been mentioned. Rectal examination on the other hand at times seems to give valuable information. Tenderness usually observed through the rectum on the right side first and later on both. In all of seven cases examined by Stewart of Philadelphia positive information was afforded, and in the Royal Victoria Hospital out of six cases in which examination was made five gave what we considered important and decisive information. In one case the examination was negative. It is contended by some that tenderness may be very easily elicited in this way by the finger impinging on the intestine where an ulcer is situated. This experience has not been often present so far as our own examinations are concerned. In connection with the rectal examination one case will illustrate to some extent the diagnostic importance. A patient with typhoid on the 39th day of disease complained of short colicky pains in the abdomen radiating to the penis. The pain did not last long and was quite relieved by the administration of an enema. Three hours later, however, some pain returned and in addition some very slight tenderness in the hypochrondrium. Rectal examination, however, revealed distinct tenderness on the left side but careful examination otherwise showed no distention, nor especial alteration in the abdomen except perhaps a slight increase in tension of the left rectus muscle. The blood count was normal, the pulse a little bit increased, but nothing else of importance till four hours later when rectal examination revealed still greater tenderness and on palpation from above there was found a small circumscribed area of tenderness in the left lower quadrant just above the pubis. The leucocytes numbered 7,000. There was no increase in rigidity nor any other signs to confirm our suspicion of perforation. The examination per rectum, however, seemed to justify an exploratory laparotomy which was done and the perforation found and sutured. Miclescu lays stress upon the value of singultus in typhoid perforation.

The blood. As has been already noted by C. K. Russell and others the leucocyte count as a rule is of very little value. Examination was made in 18 of our 32 cases and when made the white cells were found

in only two cases to be above 10,000 until after general peritonitis was well established, even though repeated examinations were made from time to time both before and after perforation was established.

Perforation and Pseudoperforation. How can one decide when to operate and what shall be the signs upon which one can rely? Perhaps one may say as does Stewart that where pain, tenderness and rigidity co-exist one should operate. Elsberg of New York laid down the following rather unsatisfying rule, if the symptoms have lasted 12 hours and the signs and symptoms point more to perforation than anything else and the patient is getting worse one should operate; if, on the other hand, the patient should be seen after more than 24 hours has elapsed and the condition be still good and the diagnosis doubtful one should wait still for a few hours before operation. Although in one of his cases this latter rule proved of value it is doubtful whether such long waiting is justifiable where the diagnosis is at all suspicious. It is true that there are many instances not of a perforative character which give rise to the symptoms of perforation and yet subsequent events prove that conditions of the most various kinds have given rise to the suspicion. Thus, for example, Scott, of the University of Pennsylvania, records 10 cases of pseudoperforation with operation with the following results:— Two, appendicitis; two, left basal pneumonia; two, gastritis, or enteritis; one, hemorrhage, and one quite unexplained. In our own hospitals in Montreal exploratory laparotomies have been done for suspected perforations, and in some cases enlarged mesenteric glands have alone explained it; and in other cases the symptoms arose from a different source. It is interesting to recall that in one case a perforated gall-bladder gave rise to the symptoms as the result of a typhoidal cholecystitis.

CONCLUSIONS.

One cannot accept the definition of perforation symptoms as given in many of our modern text-books. It implies great danger in waiting for symptoms.

The difficulties of early diagnosis are often very great, sometimes insurmountable because the diagnosis seems impossible.

Typhoid fever is always best under institutional treatment, where a surgeon is readily obtained with every facility for abdominal operation.

Not only should careful examination of typhoid patients be made from day to day but careful notes of the daily condition should also be recorded. Too much reliance should not be placed upon the nurse's reports. All this applies equally to the mild and severe cases.

Due respect should be held for any abdominal pain, no matter how slight in the course of typhoid fever, for pain is by far the most important symptom of perforation. There is nothing characteristic about the pain, though it is nearly always sudden in onset. Its degree, location, duration, et cetera, all vary. Severe unaccountable pains often exist in the course of typhoid fever, without perforation.

Tenderness, especially when over the site of pain, is the next most important symptom.

Early local rigidity to be carefully looked for.

Increased rate of the respiratory movements seems to be another important feature. The degree of the respiratory portions is not of much importance. The other physical signs are of minor importance in the early stages of perforation. Though one should look early for local rigidity rectal examination should be made in all cases and should be considered an important aid to the diagnosis.

The signs as exhibited on a chart should not be considered with too much significance for it very frequently happens that there is no alteration whatever in pulse or temperature until many hours have passed. No reliance should be placed upon blood examination. Where doubt exists as to the diagnosis it is far wiser to explore early than to wait until it is too late. Experience has taught that exploratory operations in the course of typhoid fever without perforation are attended with very little risk.

THE FEVER OF LATE (VISCERAL) SYPHILIS—ITS DIAGNOSTIC DIFFICULTIES.

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Introduction.

Mr. President and Gentlemen:

The occurrence of fever in the invasion period of syhpilis, is fairly well known, in the secondary stages it is generally known, but that in late, and especially visceral, syphilis a chronic fever may occasionally be present, and give rise to serious diagnostic difficulties, unless the possibility be kept in mind, seems to be not yet generally appreciated by the general practitioner. References in the text-books, both special and general, are either absent or lack precision (the later editions of Osler and Musser's "Diagnosis" may be cited as notable exceptions), and the special work of Musser, Janeway, Futcher and Stengel has not attracted the attention which its interest and importance deserve.

A case which came under my observation may illustrate:—

Report of Case.

Syphilitic fever of a remittent type, associated with enlargement of the liver and with night sweats, emaciation and other symptoms suggestive of tuberculosis, which for months was suspected to be present. Diagnosis established by the discovery of periosteal node on the rib and by the cessation of fever, etc., on administration of mercury and potassium iodide.

Male, æt. 40, of good social position, family history, habits and previous health. His life was sedentary and strenuous. Had an old standing recurrent urethritis with stricture, which had been operated on. Complained of recent slight loss of weight and strength, dyspepsia and constipation. A painless enlargement of the liver had been detected by his medical attendant, a genito-urinary specialist of repute in a city of the first rank. No history or evidence of alcoholism, syphilis or malaria. The man was in fair condition — a trifle sallow, the tongue was coated, the temperature always normal and the pulse quiet. The urine was normal. The liver showed moderate symmetrical enlargement which was noticeable in the epigastrium—it was a trifle tender—the fæces were pale and scybalous. The spleen was a little enlarged. A tentative diagnosis of congestion or early fatty cirrhosis of the liver of doubtful etiology was made. Treatment directed to general hygiene, intestinal antisepsis, and bleeding the portal system, resulted in considerable improvement and he returned in a short time to his business. Eight months later the patient returned, his condition much changed for the worse. For two or three months he had been failing in health and strength, had lost many pounds in weight, and had suffered from slight morning cough, severe night sweats and dull pains in the lower thoracic zone, the right shoulder, and over the right apex. Under the suspicion that tuberculosis might be present his chest and sputum had been repeatedly examined with negative results, except that some slight departure from normal had been noted at the right apex. He had been treated as probably tubercular. He was pale and sallow, but not jaundiced. There was anorexia, languor and mental depression. The scanty fæces were dry and acholic. The pulse was slightly accelerated. He showed a constant evening rise of temperature to 100°, or 101° F., which fell slightly subnormal by morning, and he suffered from frequent drenching night sweats with occasional slight chills. The liver was moderately and symmetrically enlarged with well defined margin and no sign of tumour or lobulation. It was markedly tender on palpation, and deep respiration was accompanied by marked dragging pain over it—pain which also radiated to the right shoulder and upper thorax. The gall bladder was not in evidence. The spleen was somewhat en-

larged, palpable and tender. There was not friction, hepatic or splenic. The urine was free from albumen and sugar, showed some diminution in the urea, a few hyaline casts and the presence of indican. A urethral discharge was intermittently present in which gonococci were found. No trace of past syphilis (which he denied having contracted) was discoverable; and the blood examination threw no light on the condition. The lungs showed nothing definite, though the slight normal differences seemed exaggerated somewhat at the right apex; stress had been laid on this by his previous consultant. No bacilli were found in the sputum after repeated examinations.

The Diagnosis.

The difficulty in the case seemed to lie in accounting at once for the liver-spleen enlargement and for the fever, and secondly, in eliminating the strongly-suggested tuberculosis as the main or a complicating condition. A review of the hepatic affections which may show fever along with the points above noted seemed to make it probable that the man was suffering from an intestinal hepatitis and splenitis. Of the known common causes of this condition, alcoholism seemed inadmissible. Malarial exposure had been quite possible, but the negative history and blood examination was all against it, and I had been quite unable to detect signs of past syphilis; and had no doubt that my repeated inquires had been honestly negatived. I was aware that any of these causes of hepatelis might induce fever, yet I allowed myself to be misled, and insensibly laid more and more stress on the general symptoms and the trifling anomalous signs on the right apex. A possible peritoneal tuberculosis of the upper abdominal zone, and the possibility that the chronic urethritis might be giving rise to sepsis also came under consideration and were negatived. In this state of doubt and uncertainty two months were wasted, when the solution of the puzzle was detected in the shape of a small, tender persistent note at the costo-chondral junction. A fresh assault resulted in the admission of syphilitic infection 11 years previously, and tuberculosis was promptly counted out. The results from putting him on quite moderate doses of Hg. and KI were astonishing. After taking 45 grs. of KI the fever had disappeared and did not recur. His appetite promptly returned. The hepatic and other pain disappeared. In six weeks he gained 22 lbs., and in seven the liver, which had measured 6¾ inches in R.N.L., had reached the costal margin, and was free from tenderness. He returned to his work fit and well and has remained so, though, as a precautionary measure, he takes a short anti-syphilitic course yearly.

The Literature on the Subject of Syphilitic Fever.

I have since looked up the literature of the subject; Murchison, Jenner and Baümler have called attention to it. I can only refer briefly to the special work of three men. Musser of Philadelphia—a pioneer in this subject, published a paper in 1892, in the course of which he cites three cases illustrating some of the problems it may present. In the first a visceral (hepatic) case of some complexity the correct diagnosis had escaped two acute physicians. "Both refused to consider the mod-"erate range as of any significance." In the second case, besides "The "marked fever which was an expression of syphilis," there were several complicating processes present in the course of a short illness. The fever and concomitant symptoms slowly yielded to iodide of potassium.

In the third case, one of visceral syphilis, with involvement of liver and spleen and pain in the right lung. Chills, fever and sweating were present and the simulation of malaria was very marked, and had deceived her previous medical attendant. The fever showed the higher range of the complicating secondary infections and the true intermittent lower range of syphilis itself at different periods. Musser concludes as follows: "It seems proper to infer from the above that fever either continued or intermittent is the expression of the activity of a syphilitic process, and that in an obscure case, its presence, with other symptoms, is corroborative of this specific infective process.

In 1898 E. G. Janeway (New York) recorded six cases (uncomplicated) which came under his observation, in which the fever of late syphilis had led to the diagnosis of tuberculosis.

One man had been ordered by a noted chest specialist to betake himself to a health resort for consumptives because of fever, night sweats, loss of weight and pain in the right side. Janeway's examination showed no "distinct signs of focal pulmonary disease," but, eventually, two ribs were found sensitive to pressure,, and a small sinus was found in the neighbourhood of the middle third of the right clavicle. Syphilitic infection was admitted and a cure resulted.

In another case, two of the leading diagnosticians of America had failed to make out the nature of the case, and one had sent the patient to a health resort for tuberculosis—perihepatitis was found. A history of syphilis ten years before was obtained, and the patient regained his weight, and lost his fever and malaise in two months.

A third case had been sent home from a sanitarium as hopeless under the diagnosis of miliary tuberculosis. His fever, sweats and other symptoms rapidly improved after a syphilitic history had been obtained and treatment instituted. Janeway states that in two of the cases he relates, it was not possible to state the situation of the disease after very

careful examination. "We must confess," he says, "that not a few "physicians are inclined with the above ensemblage of symptoms to "determine that tuberculosis must exist; and having reached that decision, enough of that normal variation of physical signs will be made "out to lead to the belief that the explanation has been found in cer- "tain changes." *A propos* of this, I may mention that in my own case the slight anomalies at the right apex which had been detected by the patient's previous attendant were finally referred to a slight asymmetry of the shoulder-girdle on that side.

A. Schmidt (of Dresden) has celled attention to the risks of diagnosing tuberculosis from the slight departures from normal due to an irregularly-shaped shoulder-girdle, *pseudo râles* and friction sounds made by the edges of the lungs, etc., etc.

The interesting paper of Futcher, of Baltimore (1901), well summarizes our knowledge of syphilitic fever. He reports three cases from Osler's service at Johns Hopkins. In one of these syphilitic fever of a remittent and intermittent type was for weeks suspected of being typhoid and treated as such. The diagnosis was established by the discovery of periosteal thickening over the clavicles, and by the disappearance of the fever under KI.

In another case chills and intermittent fever led to the diagnosis of malaria—the fever occurring 29 years* after the pulmonary infection. It readily yielded to anti-syphilitic treatment.

Quite recently Krause (of Breslau) has called attention to tertiary syphilis as a cause of protracted fever of obscure origin, and F. Klemperer had occasion to observe two cases within a few months where the most prominent symptom was a protracted fever of a pronounced remittent, and sometimes intermittent type, with chills. The only signs of any lesion were a slight enlargement and tenderness of the liver with traces of icterus. Both patients were promptly and permanently cured by tentative anti-syphilitic treatment. Finally, Stengel (Philadelphia) has discussed the question of syphilitic fever in pulmonary cases. I have not been able to secure a reprint of his paper.

König (Berlin) in a recent paper remarks that physicians are gradually awakening to the fact that affections of the visceral—even when they appear in the guise of functional disturbances or of febrile inflammatory processes—may be traceable to syphilis.

Analysis of Replies received to Circular Letter on Tertiary Syphilitic Fever.

In an attempt to elicit further information, I addressed a circular letter to a number of eminent internists and syphilologists, and now

* Futcher quotes interesting cases recorded by Phillips and Morgan.

submit an analysis of the answers given to my queries. The replies received numbered 35. From these must be deducted 11—including such experts as Von Leube, Fitz, Allbutt, Byrom Bramwell and Hale White—who regretted their inability owing to inadequate material or indefinite information on the subject to satisfactorily answer the questions. The remaining 24 answered them in whole or in part as follows:—

Q. 1. In your experience is fever a common symptom in tertiary (visceral) syphilis? 7 replied in the affirmative—17 that it was uncommon.

Q. 2. Is it mainly in syphilitic hepatitis that it occurs? 13 replied in the affirmative; 7 in the negative; 3 were doubtful.

Chas. Stockton, of Buffalo, says:—"No; I see these cases with no "gross lesion, merely scattered diagnostic lesions. I see hepatitis often "with slight fever; severe fever without signs of hepatitis." Futcher, of Baltimore (with whose views on the subject I am informed Prof. Osler entirely concurs) says:—"As to this point I am not prepared to "say definitely, but in tertiary visceral lues I am inclined to think that "gummata of the liver and possibly a hepatitis are most often the cause "of the fever." Rolleston, of London, says:—"I am inclined to say "yes." Stengel, of Philadelphia, says:—"Not mainly; though un-"doubtedly frequently." Musser, of Philadelphia, says:—"By no "means. It can occur in the secondary stage, and I have seen it fre-"quently in glandular, bone and non-demonstrable, but doubtless true "visceral syphilis." Eugene Fuller, of New York, says:—"Syphilitic "hepatitis does not of itself cause fever, but fever may result from "the complications it causes through obstructing the portal venous cir-"culation and deranging the bowels. If a gummatous cavity forms in "the liver, streptococcus infection of that cavity may occur and then "fever will ensue." Cabot, of Boston, and Norman Bridge, and Lydston, of Chicago, reply, "Yes."

Q. 3. What is the usual range and type of this fever—and is it commonly associated with sweating and other symptoms that might lead to confusion with tuberculosis? Most stated that it was irregular and variable, or words to that effect, *e.g.*, "Intermittent—often with sweats" (Musser); "Hectic in cases of pulmonary syphilis" (Martin); "Low "grade, 102°, 103° F., but variable and irregular. No sweating" (Gilman Thompson); "99°, 100° for a few days, then an interval of normal "temperature, rarely over 100°" (Cabot); "101°, 102° F. I have "not noticed sweating" (Rolleston); "The fever begins insidiously "with a range of temperature (diurnal) suggestive of typhoid rather "than tuberculosis. It tends to indefinite protraction, and, in my ex-

"perience, is not frequently associated with sweating" (Atkinson); "The temperature reaches to between 101°, 103°. It may be continuous "as in typhoid, but is more likely to be remittent or intermittent, simu- "lating malaria" (Osler and Futcher); "No. Have not observed the "special type, but found it distinctly irregular" (Anders); "Where "there is some ascites and fever syphilitic hepatitis might be con- "founded with peritoneal tuberculosis" (Eugene Fuller).

Q. 4. Has it ever led to difficulties in diagnosis as regards the early stage of pulmonary tuberculosis? 11 answered in the negative; 9 in the affirmative; 3 were doubtful.

"Yes; occasionally found difficult to differentiate; but in many "cases, while lesion in lung is tubercular, there are evidences in the "liver, spleen or elsewhere of syphilis" (Thos. Oliver); "Yes. Ener- "getic local (inunction) and systemic treatment usually clears up "doubts in diagnosis" (R. W. Taylor); "Yes; see my paper in *Univ.* "*of Pa. Med. Bulletin*, May, 1903" (Stengel); "I have been on the "look out for it for twenty years and have not been misled. I can "see how mistakes can occur" (Musser); "In my own experience, no. "The possibility was kept in mind, but typhoid and malaria have been "chiefly expected until the true nature of the fever is revealed" (Fut- cher and Osler); "Yes, but not insurmountable" (Stockton); "When "two processes co-existed. Also has been mistaken for typhoid, mal- "aria, etc. Careful temperature record will probably show elevation in "most cases at periods of activity, and mistakes are naturally likely to "occur" (C. W. Allen); "A probable difficulty, but have not met with "it" (McPhedran).

Q. 5. In the absence of definite signs and history would the "tuber- culin" reaction be of any real value in differentiating, say, between an early syphilitic hepatitis and early tuberculosis?

9 answered in the affirmative; 5 in the negative; 8 were doubtful.

"I do not know that great reliance can be placed on the 'tuberculin' "test because, even if a febrile reaction ensued, one could not exclude "the possibility of the fever being one of the febrile attacks due to the "syphilis" (Futcher and Osler); "Tuberculin would be of value" (Musser); "Not positive" (C. W. Allen); "Yes; of great value" (Gil- man Thompson); "Possibly. I have tried it. Unfortunately we some- "times obtain a slight tuberculin reaction in many cases of syphilis which "confuses the result" (Stockton); "On a priori grounds I should think "that a positive reaction would not exclude syphilis as the patient "might well have both morbid conditions. I am not aware that syphilis "alone ever gives a tuberculin reaction, hence a negative result "would militate against tubercle and in favour of syphilis. As you

probably know actinomycosis has been said to give a positive reaction "with tuberculin" (Rolleston); "I should think the tuberculin test "would possibly be very useful" (J. E. Atkinson).

Q. 6. Is tertiary syphilitic fever usually amenable to mercury and the iodides? 15 gave more or less qualified affirmatives; 2 a qualified negative; 7 were doubtful.

"Yes, although I have seen it last a few weeks" (Anders); "It is "astonishing how these cases clear up under mercury and the iodides" (Osler); "Yes, unless the gumma is suppurating, *i.e.*, shows secondary "infection" (Rolleston); "It is often rebellious to treatment; but "the fever is often limited and irregular without specific treatment" (Gilman Thompson); "Yes, in my experience, there is a ready response "to the administration of iodides" (Futcher); "Usually, yes; but by "no means always" (Paul Thorndike); "Often increased by iodides. "I don't know as to Hg." (Stengel); "Yes, indirectly. Oftentimes the "fever yields most readily to intestinal antiseptics" (Lydston); "Most "assuredly—wonderfully to both measures, but Hg. preferable" (Musser); "Iodides, and to a lesser degree mercury, could have little im- "mediate effect on a complicating fever. These drugs, of course, when "properly administered, would finally cause a resolution, in connection "with the infiltrating elements of these lesions, and, with the establish- "ment of such resolution, complicating conditions which may have been "associated with fever are also apt to subside" (Eugene Fuller).

Dr. Janeway recommends the mixed treatment and does not find heroic doses of either remedy necessary.

Through the courtesy of Dr, Cabot, of Boston, I am enabled to add the following data taken from his cases in the Mass. General Hospital.

TERTIARY SYPHILIS (GENERAL).

Total	16 cases.		
Fever present at times in	2 "	(uncomplicated).	
" " " in	5 "	(with complications, e.g., rheumatism,	
" " with chills and sweats	1 "		[nephritis, etc.)

SYPHILIS OF LIVER (GUMMA).

Total	7 cases.
Fever present at times in	6 "
" " with night sweats	1 "

SYPHILIS OF TESTICLE (TERTIARY).

5 cases with no history of fever.

The Cause of Syphilitic (tertiary) Fever.

It is clear that tertiary luetic processes involving the nervous axis, if properly situated, may give rise to fever, and it is equally evident that secondary infections and complications, *e.g.*, suppurating gumma may do so. The moot point seems to be, as to whether there is a true syph-

ilitic fever in these visceral cases—a fever depending essentially on the syphilitic infection. This appears to be the view held by several of those who have written on the subject, *e.g.*, Osler, Musser, Janeway, and Futcher.

In some of Janeway's cases, after careful examination, he was unable to say where the lesion was, and in the case reported by Sidney Phillips, and in my own, the fever seemed to be referable to the syphilitic process alone.

Bearing in mind the great frequency with which the liver is more or less involved in these late visceral cases, and the probability that slight interstitial and other changes may often be present long before definite enlargement of the organ can be detected, it seems that the views expressed by Crofton, of Chicago, in his reply to my circular might explain a large proportion (possibly all) of them. He says:—"I consider the "fever occasionally seen in 'tertiary' syphilis, when not due to some "accidental infection, attributable to functional interference with various "viscera, notably the liver—hepatic insufficiency—permitting diapedesis "of intestinal pyretic toxins into the circulation. The curve of the "temperature will depend on the character and quantity of those toxins "and of other metabolic poisons that are not properly disintoxicated in "the liver and in other disintoxicating glands."

This view, I incline to think, the correct one, *i.e.*, that in the cases of visceral syphilis attended with fever, the specific process so interfered with the functionating of the "liver filter" that leakage of fever-producing toxins into the general circulation is permitted.

Summary.

From the data above mentioned I think we may conclude:—

(1) That late (visceral) syphilis is attended with persistent fever much more frequently than is generally supposed; a fever apart from secondary infections and complications.

(2) That the fever is variable in type; but is commonly of low grade and intermittent.

(3) That it is chiefly in those cases where the liver is involved in the specific process that it occurs; and may be explained by "hepatic insufficiency" permitting the leakage of toxins into general circulation.

(4) That it may be associated (occasionally) with chills, night sweats

* The therapeutic test should, of course, have been instituted earlier. Sodium Iodide was, in fact, recommended as empirical treatment after I first lost sight of the case, but through some oversight was not tried. Later on I was deluded by my belief in the negative history, etc., and by the "bogey" that if tuberculosis happened to be present, harm might result from the iodides.

and emaciation so as to simulate tuberculosis, sepsis or malaria—especially the first.

(5) That the "tuberculin" test is of little value in attempting the sypmilis-tubercle differentiation and may be risky.

(6) That no difficulties and errors had occurred in the experience of leading clinicians, the only safeguard is eternal vigilance and an exhaustive search for the stigmata of past syphilis in every obscure case of chronic fever. The therapeutic test, though unscientific, is permissible.

(7) That the fever of late syphilis (apart from secondary infections) is, in the great majority of cases, rapidly amenable to treatment by Hg. and KI.

(8) That the best method is by the "mixed" treatment and heroic doses are unnecessary and may be harmful.

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To all of these gentlemen my best thanks are due for their assistance in this little inquiry.

F. A. Davis Company, of Philadelphia, announce the early publication of a Treatise on the Motor Apparatus of the Eyes, embracing an Exposition of the Anomalies of the Ocular Adjustments and their Treatment, with the Anatomy and Physiology of the Eye Muscles and their Accessories, by Dr. George T. Stevens, of New York. It will be complete in one Royal Octavo Volume of about 500 pages.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

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Remittances, advertisements or business communications are to be addressed to the Montreal Medical Journal Co., Box 273; all others to the Managing Editor, 216 Peel Street, Montreal. All communications intended for insertion in this Journal are received with the understanding that hey are contributed exclusively to this Journal. A limited number of reprints of articles will be furnished to authors at cost price, if a request to that effect accompany the manuscript.

VOL. XXXIV. OCTOBER, 1905. No. 10.

THE LATE PROFESSOR VON MIKULICZ.

To those who had the pleasure of meeting the late Professor v. Mikulicz, chief of the Breslau Surgical Clinic, during his visit to Montreal two years ago, the news of his death in June of this year must have come with a feeling of real, almost personal, sorrow. One of the greatest of surgeons, he was also one of the kindliest of men. As in Baltimore there was an Osler-worship, so in Breslau was there a Mikulicz-worship. One saw the evidence of it most plainly in the house-men, the "Assistenten," who, in the midst of the hard routine duty of the regular clinic, found time, practically all of them, to undertake original work at the suggestion and with the help of the master. His own love of pure science, his own enthusiasm for scientific truth, and, not the least, his own willingness to work,— all these he had the gift in no small degree of inspiring in his juniors. The result was, on the one hand, that the work issuing from Breslau made the surgical clinic there one of the famous ones in Germany; and, on the other

hand, that von Mikulicz of the German chiefs of clinic, was one of the most beloved. Believing that a few details concerning his life will interest the medical men of Montreal, we append some extracts from an obituary notice which appeared in the *Centrablatt f. d. Grenzgebiete d. Med. u. Chir.*, 1905, No. 12.

Johannes von Mikulicz was born in Czernowicz, May 16th, 1850; and died on the 14th of June of this year, that is, in the 55th year of his age. His student days were passed at Vienna, where he obtained his doctor's degree in 1875. At this time he had the good fortune to become one of Billroth's assistants; with whom he remained during the whole of the latter's life upon terms of the most intimate friendship. The seven years of assistantship with this great teacher were marked by a series of valuable "Arbeiten." In 1879 he visited Lister and v. Volkmann, and Listerism found in him a warm advocate; in fact, he worked continually, even to his latest years, upon this subject. To him we owe the casting aside of the old carbolic spray; to him also the recognition of the value of iodoform in wound treatment.

In 1882, being 32 years of age, he accepted a call to the surgical chiefship at Krakau, where he remained four years. From Krakau he was advanced to Koenigsberg; and thence, after other four years, to Breslau. Here he reigned as Professor of Surgery and Chief of the Imperial University Clinic for close upon fifteen years.

Within the bounds of this short appreciation, it is impossible to give even a proper outline of the work accomplished by von Mikulicz. There are few chapters of general or of special surgery that have not been enriched by valuable contributions from his pen. His first publication, the article on rhinoscleroma, is still authoritative. His treatise on genu valgum, bringing order out of chaos, remains a classic. His studies on organotherapy in goitre and Graves' disease, upon symmetrical hypertrophy of the salivary glands; his work upon torticollis; and many others — the list of his "Arbeiten" runs to about 100 — give proof of his untiring zeal and industry. Although, in the best sense of the word, a general surgeon, he seemed to have a special liking for orthopædics. In this branch his name is especially connected with the treatment of scoliosis, the scoliosometer (devised by himself), the gradual reduction of congenital hip dislocation, and the treatment of muscular torticollis.

Mechanically one of the most skilful operators of his time, von Mikuliez devised numerous new procedures in technique which go by his name. Of these the best known are: the drilling of the antrum of Highmore; the method of plastic repair of saddle-nose; the resection of the tarsus and ankle-joint, and pyloroplasty.

With v. Bruns and v. Bergmann, he published the very successful Handbook of Practical Surgery, lately translated into English, in which he himself wrote the section on gastro-intestinal surgery.

It was indeed a sad irony of fate which decreed that he who had done the most successful work of the world in stomach cancer should himself died of that dreadful disease.

His last illness first gave symptoms shortly before Christmas of last year, when he himself discovered a hard mass in the stomach region. Not to disturb the pleasures of Yule-tide for his wife and children, he kept the bitter discovery a secret until after the New Year. Then, going down to Vienna, and putting himself into the hands of v. Eiselsberg, one of his close friends, he asked for a radical operation. Unfortunately this proved to be impossible; laparotomy revealed a cancer of the posterior stomach wall invading the pancreas; and the mass felt by v. Mikulicz proved to be a metastasis. The abdomen was closed without further interference.

He allowed himself but a short time for recovery from the operation; returned to Breslau; and took up his work again with forced energy, struggling nobly to wrest from Death a few more months of work for the benefit of his fellow-beings. But, before long, hæmatemesis forced his surrender; giving up work, he calmly faced the end.

Shortly before his death, he wrote to a friend: "I am leaving life without a grudge, nay, satisfied. I have worked as I was able; and my work has found recognition; and I have been happy."

The name of v. Mikulicz will live after him. He is of the company of those of whom his immortal teacher said: "They live upon the lips of all men."

A WORD OF ADVICE.

It may seem a little early to begin offering advice to Toronto in connexion with the 74th annual meeting of the British Medical Association, which will be held in that city in 1906. We are quite sure that the committee of arrangements do not feel the necessity of troubling us to undertake the labour of their instruction; yet we should be negligent if we refrained from offering a suggestion, even if it be wholly gratuituous. It is this: The President should not convert this great meeting into an association of antiquarians.

The thing has been done before. At the Leicester meeting, the President, Mr. Franklin, began his address from a period at least eight centuries before the Christian era, when King Lear, with his two unprincipled daughters, dwelt upon the banks of the Soar. Dr. John Stewart at the last meeting of the Canadian Medical Association took

up his relation at the time of Lief Ericson and his adventurous vikings, before rising to the elevation and purity of his thought. This length of view is excessive. The President in Toronto could not go so far back; but if he followed so illustrious an example, he might begin with the despatches of the Canadian officials of Louis XIV., all of which are perfectly accessible, and contain full information of the events which centred in Fort Rouillé. It may indicate an excess of temerity on our part to revive this old slander that Toronto was at one time as French and Catholic as ourselves; but the fact is there.

Another method of construction is to begin with the history of medicine, as it appeared amongst the aboriginal inhabitants of Canada, and examine the relics which yet survive amongst the various tribes. We are afraid that this plan also is barred, for Sir Wm. Hingston adopted it in London in 1892, when he gave the address in Surgery. As if this were not enough, Dr. A. A. Foucher, before the Second Congress of French-speaking Physicians of North America, in June, 1904, described the origin and evolution of medicine in Canada. We fear that that page of history is also closed.

There are yet two themes remaining: a history of medicine from the time of Hippocrates until the present, and a review of the progress of the science during the past year or during the lifetime of the speaker. These themes possess many attractions; but Clifford Albutt, before the St. Louis Congress in 1904, made one of them at least his own, in his historical relation of medicine and surgery up to the end of the sixteenth century. Dr. Keen has recorded the progress of Surgery during the nineteenth century in the *New York Sun,* which is, perhaps, not the best vehicle for conveying scientific instruction.

This journal, in common with many others, attempts to give a monthly retrospect of medicine. Too much importance need not be attached to that; but we doubt if it could be done better in a Presidential Address.

We have thus pointed out, in a delicate way, the themes which may be avoided, and we have given the advice most cheerfully. It would be an excess of good nature on our part to suggest others which might be employed. That may well be left to the good judgment of Dr. R. A. Reeve, to whom the task will in all probability fall.

McGILL MEDICAL FACULTY.

Another session of the Medical Faculty is now under way. This is the seventy-fourth, and it began under good auspices. Dr. Jacobi, of New York gave the opening address before a large audience of professors and students. What he said was full of interest, and we expect

to have the privilege of publishing the address in the next issue. The students did not fail to be impressed by the venerable personality of the lecturer, nor were they insensible to his sagacity and the literary grace of his speech. It was no small matter for a man of so mature years and so many engagements to undertake so great a labour, but he had some reward in the enthusiastic reception which he received.

Dr. Jacobi correctly classified his performance as a kaleidoscopic view of the past, and his pattern was sufficiently variegated to warrant the employment of the term. He described medical education as it was at Bonn and Göttingen over half a century ago, and traced its progress in other centres. He gave vivid pictures of his teachers, and, of such friends as Virchow, Billroth, Frerichs, Rokitansky and Weber. He made excursions beyond the Rhine, and touched the borders of the Teutonic mysteries of materialism and the First Cause. Throughout the address he made a judicious use of humour and classical quotation, both of which were cordially received by the students.

The Principal in his short address very properly referred to the complete union of the Faculty with the University, which had been consummated during the present year, and he commended the Dean for his assiduous labour in that direction. The Principal also spoke sympathetically from his own experience to the men of the first and fourth years.

"What went ye forth for to see" would be a fair question to propound to the physicians who assisted at the necromancy of "Dr. Kaiser" on the 8th of September, at the Windsor Hotel. Students of pathology have been taught these many years that, following an injury, a series of events occurs to which the term "inflammation" is applied. Did these physicians think that by some foolish sorcery a new series could be devised, that a secret "fifth substance" had the power of destroying the reaction to injury with which all living tissue is endowed? Scientific medicine takes its stand upon certain inviolable principles and inevitable results. Charlatanism proclaims that there are no laws, or that, if there are, they may be set at defiance. The demonstration which "Dr. Kaiser" made upon himself was inconclusive. The burning was admitted; but he declined to show the results. He has since "exhibited" the injured arm, but it is not stated who saw it. If those present at the trial by fire had submitted themselves to the test, and informed us of the result of their researches, there would be something more satisfactory to go upon. We await with some interest the "literature" which is sure to arise out of this solemn foolery.

The last number of the *Bulletin Sanitaire*, which is the publication of the *Conseil d'Hygiène* of the Province of Quebec, contains some interesting statistics bearing upon tuberculosis for the year 1903. The deaths from this disease were 2,943 out of 30,876 deaths from all causes. In Ontario the total deaths were 27,864, and 2,694 were caused by tuberculosis. Of those who died in Quebec that year 220 were under one year; 239 between one and four years; 238 between five and fourteen years; 277 between fifteen and twenty-four; 974 between twenty-five and forty-four; 312 between forty-five and fifty-nine; 124 between sixty and sixty-nine, and 59 over 70 years. In Montreal the deaths from all causes were 7,432 in a population of 271,023, and from tuberculosis 837; of each 100 deaths in urban districts, 11.1 were caused by tuberculosis, and of each 100 deaths in rural districts 8.6 were caused by tuberculosis.

The melancholy case of Joseph Martin who destroyed the life of his infant child, whilst suffering from mental alienation, is a fresh warning to physicians against the evil of leaving a man in his condition unattended. The papers for his commitment to an asylum had been in his house for a fortnight. Through a laudable but misdirected sentiment they were not put in effect, and this fearful tragedy was the result. A physician has not performed his whole duty when he has signed the certificates. He should see to it that his patient is protected against his own disordered mind.

The Toronto General Hospital has made an effort to solve the question as to what relation should exist between hospitals and practitioners who are not on the staffs. The Board of Trustees has adopted the following rule: Surgeons who are not members of the staff, who desire to perform operations in the theatre, may do so on private and semi-private patients only, with the approval of a member of the surgical staff, provided that such member be present at the operation.

Reviews and Notices of Books.

ORTHOPÆDIC SURGERY. BRADFORD and LOVETT, 3rd Ed., 1905. Wm. Wood & Co.

The work of Bradford and Lovett is already too well known in its earlier editions to need any elaborate encomiums at this time. During the past decade, even during the past lustrum, orthopædic surgery has made very considerable advances along certain lines, notably, as the authors remark, those of congenital hip dislocation, scoliosis, coxa var-,

and the non-tuberculous diseases of joints. These subjects have been largely rewritten and brought satisfactorily up to date.

Nevertheless, while the book represents, in a general way, the best level, perhaps, of American conservative orthopædics, there are certain points, involving essentials, which cannot but suggest themselves to the reviewer as being subject to criticism. For instance, the pathological side of the subject, while illustrated by numerous admirable cuts and photographs, lacks upon the whole a thorough and satisfactory discussion. This is true of most books on this subject printed in English as compared with the corresponding German publications. There is, as yet, no American or English book on orthopædics that can be placed as high as Hoffa's.

In the chapters upon tuberculosis of bone, the practical treatment is given with excellent detail, and Nichols's photographs of lesions are very good. But, is it quite right to advise opening a retropharyngeal abscess through the mouth, and give but a passing mention to external incision? The conservative treatment of cold abscesses, so strongly advocated by the late von Mikulicz, by aspiration and the injection of iodoform emulsion, a treatment which, at least, protects best from pyogenic infection, is given but scant attention, and that largely condemnatory. Open incision with drainage is recommended, with the somewhat naïve remark that the resulting sinus "will ultimately become infected with pyogenic organisms, thereby adding a pyogenic to a tuberculous infection."

The subject of arthritis deformans, in which so much good work has lately been done by the Boston school and by McCrae of Baltimore, is given satisfactory consideration.

The chapter upon scoliosis is admirable. So is that upon anterior poliomyelitis, especially in so far as the mechanical treatment of its deformities is concerned; but in the description of operative measures, a decided lack is felt. The important operation of arthrodesis is dismissed in a scant couple of paragraphs; while the wide field of tendon transplantation, an operation which under improved methods and with indications more accurately established, has recovered from the check of early failures, receives hardly sufficient attention.

Probably the two best chapters in the book are those which concern congenital dislocation of the hip and the various forms of talipes; these are indeed worthy of praise. The book closes with a very useful chapter containing full descriptions of the various forms of apparatus used in the mechanical treatment of deformities; a chapter which will prove of the greatest value to the great mass of practitioners who are

obliged to treat orthopædic cases far from large hospitals or specialised assistance.

As a whole, the work can hardly be said to represent adequately the vast experience of the authors, an experience that would enable them to write a much more complete treatise than the present one; on the other hand, for the undergraduate, and for the large middle classs of the surgeon practitioner, it can be recommended as perhaps the best book extant upon the subject in English. *E. A.*

PHYSICAL DIAGNOSIS. By RICHARD C. CABOT, M.D., Instructor in Medicine in Harvard University. Third edition, revised and enlarged, with five plates and two hundred and forty figures in the text, 577 pages. William Wood & Company, publishers, New York.

In this book, which "endeavours to present an account of the diagnostic methods and processes needed by competent practitioners of the present date" only those methods are described which the author has come to know by prolonged use. What he has found valuable Dr. Cabot recommends to others, and in his endeavour to break down the false distinction between clinical diagnosis and laboratory diagnosis, he describes in a single section, all the methods of getting at an organ.

The field of physical diagnosis is well covered with the exception that uses of special instruments of examination, such as the cystoscope, the ophthalmoscope and the laryngoscope—among others, are scarcely mentioned. It would seem that as such instruments are so essential to a good physical diagnosis, an extra chapter or two devoted to this subject would add to the value of the book. To provide for these and at the same time not to increase the size of the work several unnecessary illustrations, as well as not a few of those which are quite useless might be eliminated.

We note in Dr. Cabot's volume among many good things which cannot fail to be most helpful to the student and practitioner, several notes explaining signs which, to say nothing more, lack clearness. Two examples may be taken:—"The moving shadow described in Litten's sign is due to the "falling off" of the diaphragm and the descent of the lung during inspiration." "Emaciation in those afflicted with aneurysm is due to loss of sleep."

A few of the terms used may be pointed out as lacking in elegance,—"the dead, *woodeny* feeling," "*crumples* up the toes toward the sole of the foot," "If the great toe *cocks* up toward the shin."

Yet another classification is found for "râles,"—but its simplicity commends it. The methods of taking the blood pressure, so much before

the profession, are described and the subject is dismissed with a few words indicating in a general way the progress made in such investigations and the possibilities. The book closes with five appendices in which are discussed Diseases of the Mediastinum, Acute Endocarditis, Physical Examination of the Chest in Infants, Radioscopy of the Chest, and the Sphygmograph.

The acceptability and helpfulness of this work can be scarcely more emphatically expressed than by the statement of the fact that at the end of six years it has reached its third enlarged and revised edition.

HUMAN PHYSIOLOGY. Prepared with Special Reference to Students of Medicine. By JOSEPH H. RAYMOND, A.M., M.D., Professor of Physiology and Hygiene, Long Island College Hospital, New York City. Third edition, thoroughly revised. Octavo volume of 687 pages, containing 444 illustrations, some in colours, and four full-page lithographic plates. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, $3.50 net. Canadian Agents: J. A. Carveth & Co., Ltd., Toronto.

In recent works on physiology we notice a growing tendency to disregard the boundaries with which custom has marked off this science and to trespass upon the domain of pathology and clinical medicine. In the volume before us, for instance, we find ten pages devoted to the effect of alcohol on the human body, eight pages to operative removal of the human stomach and its results, twelve pages to photography of the larynx, and two to ovarian and abdominal pregnancy.

These sections are all very excellent and interesting, and if this lavish allotment of space could be made without curtailing other parts of the book, we should have no objections to make. A book of six hundred and sixty-four pages, however, can only contain a limited number of words, and when we come to the important subjects of muscle and the nervous system we find the greatest parsimony prevailing. Some subjects that we expect to see discussed at considerable length, like the laws of contraction of muscle in response to the constant current, are not mentioned, much less explained. Similar gaps are numerous in the section on the nervous system.

Among the best features of the book are the illustrations which are numerous and well chosen. Another striking feature is the great number of acknowledged quotations from other writers. Some parts of the book in fact are largely made up of quotations and condensations from Schafer's large physiology. We must say that the selection and condensation is very well done, so that the result is usually excellent.

This book on the whole is handsome, readable and well illustrated. It

discusses in a very interesting way numerous subjects which have recently undergone important developments. We find here excellent accounts of digestion, nutrition, secretion and circulation, but we feel that a student should know a good deal more about muscle and the central nervous system than this book contains. *W. S. M.*

THERAPEUTICS; ITS PRINCIPLES AND PRACTICE. By HORATIO WOOD, M.D., LL.D., Professor of Materia Medica and Therapeutics in the University of Pennsylvania. 12th edition, thoroughly revised and adapted to the eighth edition of the U. S. Pharmacopeia, by Horatio C. Wood and Horatio C. Wood, Jr., M.D. J. B. Lippincott Company, 1905.

No work on Pharmacology in the English language was received with more interest by the medical profession than was the first edition of this volume on Therapeutics. Appearing at a time when experimental investigation into the exact action of drugs was beginning to illuminate the crude and imperfect knowledge obtained by clinical experience, Prof. Wood's treatise was the first to systematically arrange the result of these experiments and deduce conclusions applicable to therapeutics. Since that first edition pharmacology has made great strides, but a careful examination of the present volume shows that the editors have kept pace with its advances and that this edition may be accepted by the profession of to-day as in every way a modern book. Besides the changes necessary to make the work conform to the new pharmacopeia, many chapters have been re-written; seventy drugs have been added to the list of those previously discussed, and the position of some of the older drugs in the scheme of classification has been altered owing to more exact knowledge of their mode of action. We regret that alterations of this character were not more numerous. A convenient and serviceable classification of drugs is certainly of the greatest value to the student who is endeavouring to obtain a masterful grasp of our very heterogeneous materia medica. The classification elaborated by Prof. Wood in the first edition, a classification dependent upon therapeutic action, has been very generally accepted by teachers in America; and, although one or two more recent writers have endeavoured to supplant the therapeutic by a pharmacologic classification, the majority of teachers, as well as students, still prefer, we believe, the therapeutic basis. To be of value, however, the classification must be made upon the most prominent and important action of the drug. The placing of the nitrites in the group of depresso-motors is in our opinion unfortunate, for it throws into the background the all-important action of this group. Few pharmacologists to-day consider alcohol to be a cardiac stimulant,

and modern therapeutists may feel some surprise that the group of antiperiodics is still retained. The application of the term "delirifacients" to the belladonna group is also, in our opinion, inappropriate; for, although members of this group may in *toxic* doses induce delirium, such action has no therapeutic indication.

Passing on, however, to the description of the pharmacologic and therapeutic action of the individual drugs, we have for the most part, little but praise. We have long admired Prof. Wood's clear and concise description of the action of drugs as evidenced by the result of numerous experiments, and, although we may sometimes differ from him in his conclusions, we always consult with pleasure and profit his eminently practical and trust-worthy picture of drug action. The introductory chapters on remedial measures, while valuable, are, in our opinion, too brief, and do not suitably present to the student the important subjects of hydrotherapy, climatotherapy, dietotherapy and massage. We regret that as yet no text-book on therapeutics gives these subjects the relative importance which the physician of to-day assigns to them. These criticisms, however, can affect very little a work which has received the approval of the profession in every country and has now reached its twelfth edition. In its present form the work will, we are convinced, prove of much value to students generally and to the physician who desires to have a clear knowledge of the exact action of the drugs he is employing. *A. D. B.*

PRACTICE OF GYNÆCOLOGY. By WILLIAM EASTERLY ASHTON, M.D., LL.D., Professor of Gynæcology in the Medico-Chirurgical College, and Gynæcologist to the Medico-Chirurgical Hospital, Philadelphia. First edition. W. B. Saunders & Company, Philadelphia and London, 1905. Canadian Agents: J. A. Carveth & Co., Ltd., Toronto.

Professor Ashton has presented his world with a book of one thousand pages wherein, as he himself pleads, he has "considered fully both the medical and surgical aspects of gynæcology." Illustrating this text are ten hundred and forty-six new line drawings; and the whole is gracefully dedicated to Alice Ashton, his wife.

In the preface—as usual something of an "Apologia"—the author asserts that he has taken nothing for granted, and that his book furnishes full and explicit directions of "what should be done in every case." We are free to admit that subsequently he makes good this contention, for all details of treatment, operative or therapeutic, are most minutely described; while the drawings everywhere run riot, and these drawings show everything, beginning with aprons and rubber gloves.

And so far this work is good—good as a practical guide to the trained man.

But, unfortunately, the book is made to include the scientific and clinical aspects of the subject, following the order of the systematic text-book. And here the work ceases to be good, is but shortly and imperfectly done. The result is a large ill-balanced treatise which tacitly preaches that it is not so important to know "what to do," as "how to do it." The good operative "manual" becomes an indifferent "system."

Our great quarrel with Professor Ashton's book is this: it proposes, avowedly, to teach the untrained practitioner to perform surgical operations, teaches him at great length, at the cost of many pages, how to operate. Operative surgery is an art and, as any other art, cannot be learned in the study and from books. This must always be so, and, in consequence, such attempts as this of Professor Ashton's can result only in the creation of text-books that are ill-advised, and of surgeons that are amateur and ill-equipped.

DIETETICS FOR NURSES. By JULIUS FRIEDENWALD, M.D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore; and JOHN RUHRAH, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. 12mo volume of 363 pages. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, $1.50 net. J. A. Carveth & Co., Toronto.

This volume fulfils all the conditions which are necessary in a book of dietetics. It is entirely adequate for the purpose for which it is intended. It is newly written, and is not an abridgement of the larger work by the same authors.

GREEN'S PATHOLOGY. Tenth edition. A Text-book of Pathology and Pathological Anatomy. By T. HENRY GREEN, M.D., F.R.C.P., Consulting Physician to Charing Cross Hospital, London. New (10th) edition. Thoroughly revised by W. CECIL BOSANQUET, M.D., F.R.C.P., Assistant Physician to Charing Cross Hospital. Octavo, 606 pages, 348 engravings and a coloured plate. Cloth, $2.75, net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1905.

There are men now old who first learned their pathology from "Green," and have followed the progress of that fascinating branch of science in the successive editions as they have appeared. The present edition is the tenth, and one regards it with a sentiment of affection apart from its excellence as a text-book. The names of the former editors, H. Montague Murray and Walton Martin, have disappeared

from the title-page, and the name W. Cecil Bosanquet stands in their stead. Ten editions testify to the correctness of the plan upon which the work was constructed, and successive editors have not found it necessary to depart materially from the lines which were originally laid down. Simplicity, clearness and fullness have characterised the work from the beginning, and these qualities are retained in the present edition.

THE TREATMENT OF FRACTURE; with Notes upon a few Common Dislocations. By CHARLES LOCKE SCUDDER, M.D. Surgeon to the Massachusetts General Hospital. Fifth edition, thoroughly revised. Octavo, of 563 pages, with 739 illustrations. Philadelphia and London: W. B. Saunders & Co., 1905. Canadian Agents: J. A. Carveth & Co., Limited, 434 Yonge Street, Toronto.

That five editions have been called for in as many years is evidence that the book supplies a need, and is appreciated. The present edition is again somewhat enlarged, and contains about fifty new illustrations, many of them of X-ray plates illustrating the actual line of fracture.

We find here, again, evidence of advance in the treatment of fracture of the neck of the femur. The results so far have often been unsatisfactory. More perfect coaptation of the fragments and more complete immobilization, with more liberal appreciation of dietetic and hygienic resources are followed by a smaller mortality and more useful limbs. Scudder may be said to represent the views and teachings of the Boston school, and his book on fractures is up to date and teaches sound principles and approved methods.

Medical News.

CANADIAN MEDICAL ASSOCIATION.

The following is the official list of those present at the thirty-eighth meeting of the Canadian Medical Association in Halifax, August 23rd to 25th, 1905:

H. Beaumont Small, Ottawa; George Elliott, Toronto; F. W. Goodwin Halifax; A. Leitch, St. Thomas; A. Stewart, Palmerston; M. D. Morrison, Old Bridgeport, C.B.; J. Fred. Lessel, Halifax; Geo. M. Campbell, Halifax; J. St. Clair McKay, Earltown, N.S.; W. H. Hattie, Halifax; M. A. B. Smith, Dartmouth; W. P. Chisholm, Brockton, Mass.; Jos. J. Doyle, Halifax; A. I. Maider, Halifax; F. A. L. Lockhart, Montreal; A. Mather Hare, Halifax; B. S. Thorne, Havelock, N.B.; C. Dickie Murray, Halifax; D. A. Campbell, Halifax; M. E. Armstrong, Bridgetown, N.S.; C. A. Webster, Yarmouth, N.S.; John J. McKenzie, Tor-

onto; J. Ross Miller, Amherst, N.B.; R. L. Langstaff, Richmond Hill, Ont.; Duncan Campbell, W. B., Pictou Co., N.S.; R. A. Reeve, Toronto; F. R. Eccles, London; A. B. Atherton, Fredericton; F. P. Drake, London; H. L. Reddy, Montreal; W. Bruce Almon, Halifax; Charles Verge, Quebec City; J. D. Page, Quebec City; Thomas W. Walsh, Halifax; William Rockwell, River Herbert, N.S.; W. S. England, Winnipeg; W. Tobin, Halifax; Andrew Love, Sydney Mines, C.B.; Murray MacLaren, St. John, N.B.; F. H. Wetmore, Hampton, N.B.; H. S. Birkett, Montreal; Clarence L. Starr, Montreal; H. Meek, London; F. L. Burdon, London; Howard M. Church, Montreal; N. E. Mackay, Halifax; W. H. Eagar, Halifax; T. C. Lockwood, Lockport, N.S.; Ridley McKenzie, Montreal; F. G. Finley, Montreal; Chas. C. Gurd, Montreal; J. Price, Campbellton, N.B.; J. H. MacKinnon, Brooklyn, N.Y.; F. B. Day, Westville, N.S.; H. A. March, Bridgewater, N.S.; E. N. Hogan, Halifax; E. O. Hallett, Waymouth, N.S.; Francis A. R. Gow, Halifax; R. W. Powell, Ottawa; J. D. Courtenay, Ottawa; J. V. Anglin, St. John; E. N. Payzant, Wolfville, N.S.; R. E. Mathers, Halifax; L. W. Johnston, Sydney Mines, C.B.; J. J. Roy, Sydney, C.B.; R. F. O'Brien, Elmsdale, N.S.; R. D. Rudolf, Toronto; A. McPhedran, Toronto; G. J. McNally, Fredericton, N.B.; R. A. H. Mackeen, Glace Bay, C.B.; W. H. Irvine, Fredericton, N.B.; A. G. Ferguson, Dalhousie, N.B.; E. H. Kirkpatrick, Halifax; Robert King, Halifax; William D. Forrest, Halifax; F. Montizambert, Ottawa; W. J. Bradley, Ottawa; C. P. Bissett, St. Peters, C.B.; John McMillan, Pictou, N.S.; D. J. Macdonald, Sydney, N.S.; W. W. Alexander, Lachute, Que.; B. F. Boyce, Kelowna, B.C.; J. J. Cameron, Antigonish, N.S.; G. E. Armstrong, Montreal; John E. Somers, Cambridge, Mass.; Frank R. England, Montreal; F. V. Woodbury, Halifax; A. F. Buckley, Halifax; Edward D. Farrell, Halifax; M. A. Curry, Halifax; Alex. Taylor, Goderich; D. H. Taylor, Londonderry, N.S.; R. B. Nevitt, Toronto; A. McD. Morton, Bedford, N.S.; H. M. Jacques, Canning, N.S.; Thos. Trenaman, Halifax; Wm. Warwick, Westfield, N.B.; A. T. Shillington, Ottawa; L. M. Murray, Halifax, N.S.; J. L. Chabot, Ottawa; Osborne Morris, Vernon, B.C.; A. D. Blackader, Montreal; F. LeM. Grasett, Toronto; Freeman O'Neill, Louisburg, C.B.; David Alex. Shirres, Montreal; James Ross, Halifax; D. G. J. Campbell, Halifax; C. H. Dickey, Halifax; W. G. Morrow, Montreal; A. J. Cowie, Halifax; J. W. McLean, North Sydney, C.B.; F. S. Creelman, Maitland, N.S.; J. W. T. Patton, Truro, N.S.; C. Randall Gates, North Brookfield, N.S.; J. Clyde Macdonald, Westville, N.S.; F. N. G. Starr, Toronto; F. J. A. Cochran, Halifax; M. Chisholm, Halifax; E. E. Bissett, Port Morrice, C.B.; E. Douglas, Halifax; Francis M. Caird, Edinburgh, Scotland; W. N. Wickwire, Halifax; H. K.

McDonald, Lunenburg, N.S.; A. M. Hebb, Chester, N.S.; F. S. Yorston, Truro, N.S.; Howard A. Kelly, Baltimore; H. E. Kendall, Sydney, N.S.; H. Geo. Addy, St. John; G. L. Foster, Halifax; Herbert A. Bruce, Toronto; Charles S. Morton, Port Greville, N.S.; Edward Archibald, Montreal; Joseph Hayes, Nelson, N.B.; J. S. Bentley, Truro, N.S.; Mary L. Randall, Sydney, C.B.; J. H. Bell, Halifax; W. Grant Stewart, Montreal; A. P. Reid, Middleton, N.S.; D. J. Gibb Wishart, Toronto; W. W. Goodwin, Boston, Mass.; Alex. Murray, Deer Island, N.B.; J. A. Turnbull, Clark's Harbor, N.S.; H. V. Pearman, Halifax; S. R. Jenkins, Charlottetown; H. D. Johnson, Charlottetown; W. F. Hamilton, Montreal; W. T. M. MacKinnon, Amherst, N.S.; D. MacKintosh, Pugwash, N.S.; R. D. Bentley, Wallace, N.S.; A. S. Simpson, New Glasgow, P.E.I.; P. M. Balcom, Aylesford, N.S.; J. A. Sponagle, Middleton, N.S.; L. R. Morse, Lawrencetown, N.S.; Geo. H. Cox, New Glasgow, N.S.; S. C. Primrose, Annapolis Co., N.S.; G. F. Dewar, Southport, N.S.; A. J. Murchison, Clyde River, P.E.I.; C. J. Miller, New Glasgow, N.S.; W. B. Moore, Kentville, N.S.; H. R. Munro, Stellarton, N.S.; C. J. Margeson, Hantsport, N.S.; J. B. Black, Windsor, N.S.; P. McLaren, Montague, P.E.I.; Robinson Cox, Upper Stewiacke, N.S.: J. A. Sutherland, Springhill, N.S.; W. G. Putnam, Yarmouth, N.S.; H. A. Lafleur, Montreal; James Bell, Montreal; J. Appelbe, Parry Sound, Ont,; F. F. Eaton, Truro, N.S.; J. W. Stirling, Montreal; S. A. Fulton, Truro, N.S.; H. E. McEwen, O'Leary, P.E.I.; Fred. J. White, Moncton, N.B.; Joseph Hayes, Parrsboro, N.S.; A. F. Norton, Oxford, N.S.; C. A. McQueen, Amherst, N.S.; W. S. Woodworth, Kentville, N.S.; W. M. Mather, Tweed, Ont.; L. C. McLeod, Newfoundland; Louis H. Morse, Digby, N.S.; Thos. W. R. Flinn, Halifax; A. C. Jost, Guysboro, N.S.; C. Kennedy, New Glasgow, N.S.; J. H. Mack, Halifax; H. V. Kent, Truro. N.S.; J. O. Calkin, Sackville, N.B.; Thomas Walker, St. John; J. M. Elder, Montreal; F. S. D. Ford, New Germany, N.S.; C. B. Trites, Liverpool, N.S.; A. A. Schaffner, Halifax; A. E. Doull, Halifax; C. F. Freeman, Folly Village, N.S.; H. P. Clay, Pugwash, N.S.; S. E. Shaw, Berwick, N.S.; St. C. J. Gallant, Kirkwell, P.E.I.; A. C. Hawkins, Halifax; M. C. Smith, Lynn, Mass.; Walter E. Boardman, Boston, Mass.; G. B. Kennedy, Tangier, N.S.; W. J. Kennedy, Musquodoboit Harbor, N.S.; G. W. T. Farish, Yarmouth, N.S.; C. S. Marshall, Bridgewater, N.S.; E. T. Gaudet, St. Joseph, N.B.; J. Howard Slayter, Halifax; F. C. Lawlor, Dartmouth, N.S.; H. D. Weaver, Halifax; L. M. Silver, Halifax; G. C. Jones, Halifax; J. R. Corston, Halifax; J. W. Daniel, St. John; F. N. Stephens, Mahone, N.S.; E. W. Dunlop, Port Dufferin, N.S.; N. F. Cunningham, Dartmouth, N.S.; Albert A. Macdonald, Toronto; J. W. Reid,

Windsor, N.S.; L. M. Curran, Fairville, N.B.; A. Lapthorn Smith, Montreal; F. Fisher, Bay of Islands, Newfoundland.

The following is the report of the special committee on Public Health, which was submitted to the meeting by Dr. R. W. Powell, convener:—

As convener of your sub-committee *in re* the creation of a Department of Public Health as a Dominion measure, I have the honour to report that practically no advance has been made since we first presented your views to the Federal Government on this important question three years ago. Strong resolutions have been passed by your Association containing the views of the profession on this matter, year after year, and they have been duly forwarded to the proper authorities at Ottawa, to say nothing of the personal representations of your sub-committee, conveyed to the Government by way of deputation and personal interview. On the last occasion in which I waited upon the Hon. the Minister of Agriculture, he pointed out to me that he was familiar with the views of our Association as contained in the several resolutions referred to above, and that it appeared to him to be unnecessary to call the committee to Ottawa to reiterate what we had so clearly laid befoer him. He assured me that the whole question had his entire sympathy and that he trusted to see such a scheme as had been outlined to him brought into operation. And he further said that it was his intention to bring the matter again to the attention of the Prime Minister, he hoped at a date sufficiently early to enable him to give something rather definite for our meeting at Halifax. Your committee feel that they have done what they could to induce the Government at Ottawa to create a Department of Public Health, under one of the existing ministers, in order to place this important branch of the public service on the same footing as it stands in nearly all progressive countries. We regret, however, to be obliged to report that so far our efforts have been unavailing, and as we believe that a more powerful and influential committee is needed from this Association to more seriously impress the Government with the great importance of this question, we respectfully ask to be discharged.

McGILL MEDICAL FACULTY.

The seventy-fourth session of the Medical Faculty of McGill University began on the 19th September with an introductory lecture by Dr. A. Jacobi, of New York. Dr. T. G. Roddick, the Dean, presided. Upon his right was the Principal, and upon his left Dr. E. P. Lachapelle. Other professors present were Drs. Girdwood, Stewart, Adami, Blackader, Ruttan and Birkett. Dr. Roddick introduced the lecturer, and gave some account of his work in the fields of medicine. At the same time

he addressed words of welcome to the students, especially to those who came for the first time. After the lecture a vote of thanks to Dr Jacobi was proposed by the Principal and seconded by Dr. Blackader in suitable terms. In presenting it Dr. Roddick acknowledged the receipt of books and specimens from the Faculty of Bishop's College, and formally declared the session open.

THE ASYLUMS OF ONTARIO.

The Medical Superintendents of the Asylums of the Province of Ontario met in Toronto on the 20th of September. They were assembled by Mr. Hanna, the Provincial Secretary, who said in his address that, when he entered upon the duties of his office he had found himself in charge of a number of matters with which he was not thoroughly acquainted. Being in charge of the asylums of the province, he had called the meeting to obtain some information, and to bring the medical superintendents of the province into closer touch with each other. He hoped there would be frequent conferences of this kind, and he expected to extend the idea into other departments of the work under his charge. Mr. Hanna then invited the conferences to present their views freely.

There were present at the conference the following medical superintendents: Dr. Charles K. Clarke, Toronto; Dr. Ryan, Kingston; Dr. Beemer and Dr. Forster, Mimico; Dr. Beaton, Orillia; Dr. Russell, Hamilton; Dr. MacCallum, London; Dr. Hickey, Cobourg; Dr. Moore and Dr. Mitchell, Brockville. There were also present: Dr. Ross, Toronto; Dr. Gilmour, warden of the Central prison; Mrs. O'Sullivan, Mercer Reformatory; Inspectors Armstrong, Rogers and Bruce Smith, and Mr. J. W. Flavelle, chairman of the Toronto General Hospital Board; Dr. W. Oldright and Dr. Campbell Meyers. Dr. MacCallum was appointed chairman, and Dr. Beemer secretary.

Dr. Campbell Meyers read an important paper upon the Treatment of Insanity in its very earliest stage. Three means, he said, had been suggested: The first was the conversion of asylums into hospitals, admitting neurasthenics without certificates; second, establishing clinical wards in asylums for the study of insanity; or, third, the establishing of one or more pavilions in connexion with general hospitals where such patients could be received. The experience of other places showed that it was to the third plan that they must turn for a practical solution of the difficulty. "If," he said, "we are to maintain the same advance in this branch of medicine in Ontario as elsewhere, we must establish these wards for neurasthenics in our general hospitals, and we will pre-

vent insanity in at least fifty per cent. of cases, relieve our asylums of that many patients, and provide better clinical instruction for medical students. The trustees of the Toronto General Hospital offer the residence of the late superintendent for this class of cases, provided that the local Government will give the amount required to alter and equip the building."

Dr. MacCallum, of London, discussed the advisability of appointing a provincial pathologist to trace the pathology of the diseases of idiots and degenerates, and to give the benefit of his advice to the superintendents. There are over 6,000 unfortunates now in the care of the province, he said, and the growing number demanded close study of the causes of their condition. Dr. MacCallum asserted that Canada was at present a dumping ground for United States degenerates.

MONTREAL GENERAL HOSPITAL.

The adjourned quarterly meeting of the Montreal General Hospital was held on the 19th September. Mr. James Crathern presided, and twenty-one governors were present. Dr. Craik gave some reminiscences of the days fifty-one years ago, when he and Dr. Ault were house-physicians. The President announced that the expenses of the quarter had been $23,858, and the income $18,975, leaving a deficiency of $4,883, and showing an increase of expenditure of $1,807 over the corresponding quarter of last year.

The report of the acting medical superintendent, Dr. F. S. Patch, stated that during the quarter ended June 30th, 803 patients were treated to a conclusion. There were 55 deaths, of which 28 occurred within three days of admission, making the mortality rate for ordinary hospital cases 3.34 per cent. The aggregate number of hospital days was 20,674, an average duration per patient of 25.6 days. The average number of patients in the hospital per day was 199.

The medical staff for the year, nominated by the medical board, entered upon their duties on September 1st, and are: Drs. J. C. Fyshe, J. L. Robinson, L. L. Reford, reappointed; C. W. Anderson, resident pathologist; E. F. F. Richards, anæsthetist; A. R. Robertson, F. J. Tees, H. C. Mersereau, T. R. B. Nelles, G. M. Hume, J. H. Macdermot; R. F. Moffatt and J. H. Mason, *locum tenens.*

Additional appointments were made to the out-door staff as follows:—

Out-patient physicians—Drs. A. W. Gordon, B. W. D. Gillies, A. C. P. Howard; C. A. Peters, appointed in place of Dr. F. W. Campbell, deceased.

Out-patient surgeons—Drs. E. M. Von Eberts, A. T. Bazin, A. R. Pennoyer.

DENTAL ASSOCIATION.

The annual meeting of the Dental Association of the Province of Quebec was held on 20th September, at Laval University. There were 75 delegates present. Dr. Hyndman, of Sherbrooke, presided over the meeting, which re-elected the three retiring examiners from the regularly constituted board of nine—Dr. C. F. Morison, Dr. Dubeau, and Dr. J. G. A. Gendreau. They are elected for three years, three members of the board retiring each year.

The officers of the association for this year are:—President—Dr. Stevenson; Vice-President—Dr. Lemieux (Quebec); Secretary—Dr. Dubeau; Treasurer—Dr. J. G. Gardner; Registrar—Dr. C. F. Morison.

Dr. R. A. Stevenson read a paper upon "Dominion Registration for Dentists."

ROYAL VICTORIA HOSPITAL.

Monthly report for August: Patients admitted, 275; discharged, 250; died, 19. Medical, 95; surgical, 114; ophthalmological, 22; gynæcological, 40; laryngological, 4. Out-door department: Medical, 857; surgical, 382; eye and ear, 387; diseases of women, 163; nose and throat, 302; total, 2,092. Ambulance calls, 80.

Dr. J. A. L. McAlpine, who for the past year has acted as Dominion Immigration Inspector and Medical Health Officer for the port of Vancouver, under appointment of the Department of the Interior, has resigned. He is succeeded in office by Dr. A. S. Monro, who has for the past two months acted as official physician for the treatment of diseased immigrants who were placed under detention by Dr. McAlpine. Dr. R. E. McKechnie has been appointed to the position vacated by Dr. Monro.

The Saskatchewan Provincial Medical Association was organized on the 5th September. At the first meeting, which was an organizing one, the work was that of drafting by-laws and electing officers. The following officers were elected: President, Dr. Henderson, Qu'Appelle; Vice-President, Dr. Turnbull, Moose Jaw; Secretary, Dr. Charlton, Regina; Council—Drs. Argue, of Grenfell; Egleston, of Weyburn; Stewart, of Rosthern; and Graham, of Regina.

Dr. Simon Fitch, of Halifax, died on the 14th September, aged eighty-six. He was born in Nova Scotia, educated at Acadia College and Edinburgh, and practiced medicine in various places. Since 1876 he

has lived in Halifax, and became one of the oldest physicians in Nova Scotia.

The Minister of Militia and Defence detailed Lieut.-Col. J. F. Fotheringham, A.M.S., and Major E. B. Echlin, 2nd Field Battery, to represent the Canadian Medical Services at the Convention of the United States Military Surgeons, which was held at Detroit, on the 25th September.

An association of physicians has been formed in the Gulf district. The first meeting was held at Rimouski, and the following officers were elected: President, Hon. Senator J. B. R. Fiset; Vice-President, Dr. J. A. Ross, M.P.; Second Vice-President, Dr. J. A. Pinault, Metapedia; Secretary-Treasurer, Dr. Jos. Gauvreau.

The annual University Lecture will be delivered on the 6th October, by Dr. Walter Scott, the newly elected Professor of Classics. The subject of the address will be "The place of Classics in the Modern University."

Dr. T. W. Poole, of Lindsay, died on August 29th, in the 74th year of his age.

Dr. George I. MacKenzie, of Pictou, died on August 22nd. He was well known in Eastern Nova Scotia.

Dr. Henry W. Robertson, Victoria, Prince Edward Island, died on August 12th, in the 62nd year of his age.

Dr. Colin I. Dewar, of Ottawa, died on the 7th September, in the forty-first year of his age. Death was sudden, and was caused by uræmia.

Dr. W. J. Andrew died in Winnipeg of scarlet fever on August 19th. He was a graduate of Manitoba University and was only 26 years of age.

Dr. Edward Tegart, of Brantford, died on the 9th September, in the seventy-first year of his age. His wife had predeceased him by only a few hours.

Dr. D. H. Harrison, a resident of Vancouver since 1900, and in the late eighties a prominent figure in Manitoba political life, is dead, in his sixty-third year. Dr. Harrison was born in London, Ont., June 1st, 1843, and was educated at Toronto University and McGill, graduating as a doctor of medicine in 1864.

Retrospect of Current Literature.

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

ERNEST W. HEY GROVES, M.D., B.Sc., B.S. (Lond.). "On Diffuse Carcinoma of the Stomach." *The Practitioner,* August, 1905.

This condition is a comparatively rare one, and in its symptoms and course differs very markedly from the common type of gastric cancer, as is shown by the description of two such cases. The first case was a man aged 51, who had been ailing for about twelve months. His symptoms began very insidiously with loss of appetite and flesh, and enlargement of the abdomen. He had had pain and some vomiting, but never brought up blood. When seen he presented the appearance seen in a child with advanced tubercular peritonitis. After aspirating six quarts of straw coloured fluid, a hard, irregular mass, about the size of a fist, was palpated in the epigastrium. Exploratory laparotomy showed the case to be inoperable, as not only the entire stomach was involved, but the growth had also invaded the portal fissure. At autopsy, about a month later, these facts were corroborated, and in addition, the whole peritoneum found to be much thickened; there was no new growth in the liver, and on cutting open the stomach its cavity was reduced to a mere slit between the indurated and thickened walls. The mucous membrane was intact, with neither fungating outgrowth nor eroding ulcer, while the muscular coat was much hypertrophied. The hypertrophy of the muscular coat is seen in all other parts of the alimentary canal when affected by cancer, and, although it may sometimes be due to functional hypertrophy above a stricture, it is certainly not always so, because it is often seen (as in the present case) to be best marked in the very midst of the new growth itself.

The second case was a woman, aged 27, who for four months had had frequent attacks of vomiting and abdominal pain. She had not brought up any blood. There was distinctly felt a small area of resistance under the upper part of the right rectus, but not defined as a definite mass. She improved markedly with rest in bed, and took a full diet of meat and vegetables without pain. In view of the almost entire absence of symptoms, and the patient's age, a provisional diagnosis of contraction of the rectus over some tender adhesions, *e.g.,* the gall-bladder, was made. Exploratory incision was declined, and she left the hospital. Three weeks later she was admitted with the clinical symptoms of a large ovarian cyst with twisted pedicle. Guided by the previous knowledge of the case, the stomach tube was passed, and over 52 ounces of a black fluid gushed out as if under great pressure. A definite mass was this

time made out lying under the right semi-lunar line on a level with the umbilicus. In view of her very weak condition operation was postponed, but improvement never came. An interesting clinical point to be noted was the fact that the hard mass which seemed evident at the pylorus, became less and less definite until death ensued, when it was impalpable. At *post mortem* the stomach was greatly distended, the greater curvature reaching nearly to the pubes. The pylorus presented no abnormality from the outside and was flaccid. On opening the organ the mucous membrane was eroded in many places, but there was no ulcer or growth affecting it. Two fingers could be passed through the pylorus. From the above facts this case appears to be one of acute dilatation of the stomach, while the thickening of the muscular coat at the pylorus and its extension on to the stomach exactly resembles a case of hypertrophic stenosis of the pylorus in the adult, but microscopic examination showed it to be malignant. The writer reasons that the pyloric condition would have presented the same flaccid state under a general anæsthesia as found at the autopsy, that no tumour would have been felt, and hence not removed. To guard against such conditions the only safe way would be to remove a piece of the pylorus for microscopic examination at the same time that a gastro-enterostomy is done.

Joseph C. Bloodgood, M.D. "Cysts of the Thyroid Gland. A Clinical and Pathological Study." *Surgery, Gynecology and Obstetrics,* August, 1905.

The paper is based upon the experience of the surgical clinic and its pathological laboratory in lesions of the thyroid gland, consisting of 122 cases in all, and classified as follows: Simple goitre, 38 cases; exophthalmic goitre, 35 cases; cysts, 24 cases; fetal adenoma, 8 cases; mixed adenoma, 4 cases; adenoma with metastases, 1 case; carcinoma, 7 cases; sarcoma, 1 case; acute thyroiditis, 2 cases; chronic thyroiditis (senile), 1 case; fistula of the thyroglossus duct, 2 cases. A short summary of the various pathologic changes in the organs and their clinical pictures is given. Thyroid lesions consist of hypertrophies, tumours, and inflammations. Simple and exophthalmic goitre represent the first; fetal adenoma, mixed adenoma, cysts, carcinoma and sarcoma are the most common tumours; while inflammation is a rather infrequent lesion. Lesions of the thyroid show themselves clinically as symmetrical enlargements, or as asymmetrical. In the former class we have the simple goitre and the exophthalmic. Inflammations, both acute and chronic may be associated with fairly symmetrical enlargement, but generally there are other local conditions indicating the in-

flammatory nature of the lesion. The asymmetrical lesions exhibit themselves as single or multiple enlargements, and in this class we have the adenomata, cysts, and malignant varieties. In view of the universally bad results of operations on malignant cases, and the difficulty of making a definite diagnosis early enough to ensure complete removal, every asymmetrical enlargement of the thyroid in individuals of 30 years of age should be removed.

Regarding cysts the age of onset was found to be between 10 and 65 but the greater number appeared between 10 and 21. No definite relation between the size of the cyst and its duration was found to exist, while tumours of long duration have varied in size at different times. With reference to the cause no definite relation was found to obtain between the cystic development and puberty, pregnancy, or the menopause. One case was observed at the onset of puberty, but disappeared within a year. One case was observed at a pregnancy, and in one case a very great enlargement of a previously small tumour was coincident with the menopause. A study of the cases shows that cysts apparently arise in comparatively normal glands. In simple goitre no large cysts were found, and in the other lesions of the gland no macroscopic cysts have been seen. The most interesting clinical fact is the relation between the cyst and certain general symptoms, somewhat like those of exophthalmic goitre, but there is no doubt that one may have a cyst of the thyroid without any symptoms save the tumour.

With reference to the position of the cyst it was found to be present in the median line in five cases, three above, one below, and one in the isthmus itself. In eleven cases it was in the right lobe, in four of these the cyst was outside the gland. In six cases it was on the left side. In two cases cysts were in both lobes. The writer is unable to come to any definite conclusion regarding the etiology of these cysts, and is not at all impressed with the usual conclusion that hæmorrhage is the preliminary factor. In many of the cases histological evidence of hæmorrhage was absent, while hæmorrhage in simple goitre without cyst formation is much more common. He believes it is more easy to explain the origin of the thyroid cyst on the basis of a solid adenoma. This incapsulated tumour may be present within or without the gland. In its growth the central dilated colloid alveoli coalesce and form a cavity due to the degeneration of the colloid material and lining epithelium cells. From the standpoint of practical surgery, our present knowledge of thyroid cysts is sufficient to indicate rational treatment. They should be excised. The operation is not a difficult or dangerous one, and the results have been a permanent cure.

Dr, Felix Perutz (München). "Subphrenic Abscess — A Critical Review of the Literature from 1894 to 1904." *Centralblatt f. d. Grenzgeb. d. Med. u. Chir.*, 1905, Nos. 4 to 10 incl.

Subphrenic abscess is such a dangerous thing that it deserves careful study; and careful study indeed it has received at the hands of Dr. Perutz. The foregoing, somewhat extensive article, a very model of the proper critical summary is based upon 208 cases published in the last decade. In addition to these, frequent reference is made to a series of 60 cases, all from Körte's clinic, reported in 1894 by Grüneisen, and to Maydl's well-known monograph which appeared in 1894 in which 179 cases were summarized. Perutz takes up the subject first in its general aspects; then in a special way, with regard to the origin of the abscess.

Etiology:—Subdiaphragmatic abscess owes its origin in most cases to infection transmitted either by continuity or by perforation from adjacent organs; that is, the stomach, duodenum, colon, liver, spleen. pancreas, and kidney. The appendix is also frequently the source, and occasionally the female genitalia. The following figures, including all three series of statistics, are of interest.

Out of a total of 447 cases, the origin of the infection was: stomach, 111; duodenum, 12; appendix, 107; liver and gall-passages, 39; echinococcus cysts (of liver), 25; intestine, 12; pancreas, 5; spleen, 9; perinephritic, 22; thoracic cavity, 21; ribs, 6; female genitalia, 6; traumatic, 14; metastatic, 16; various and unknown, 24. Thus the two most frequent causes are gastric ulcer and appendicitis.

Pathological Anatomy:—Subphrenic abscess may be either intra- or extra-peritoneal. The latter is much the rarer. The *situation* of the abscess corresponds usually to that of the organ whence infection came; if from the liver or appendix, it is almost without exception on the right side; if from spleen or stomach, on the left, save in the case of pyloric or duodenal ulcer. It is rare for more than one abscess to be formed. Its size is very variable; the largest reported contained six litres of pus. In about 20 per cent. of the cases, roughly speaking, gas is found in the abscess, as the result either of perforation of a hollow organ, or of the action of gas-forming bacilli. Abscesses originating in stomach perforations are especially apt to contain gas (from 30 to 80 per cent. in various tables).

Symptoms:—The onset may be acute, subacute, or insidious, according to the rapidity of the infecting invasion. Thus we may get cases showing all grades of severity from that of perforative peritonitis with collapse, to those of encapsuled abscess in which fever is absent and the

patient can go about up to a few days before death, practically without symptoms. In the ordinary subacute case we find epigastric pain, stabbing pain in the chest, anorexia, often, too, cough and expectoration. Pain in the shoulder is a valuable confirmatory sign when present. Some cases begin with pulmonary symptoms alone; dyspnœa, pain in the side and chill. In a few cases, all these are lacking, and the only symptoms are fever and general malaise, which may last for weeks and end in death without clearer evidences.

As to physical signs, these are seldom quite absent. Lauenstein's remark should be kept in mind; that "the subphrenic space is no preformed space; if fluid collects in it, the necessary consequence is a displacement or adjacent organ."

A swelling is, naturally, the ordinary sign; and is situated either in the epigastrium or in right or left hypochondrium. The liver is sometimes displaced downwards. Frequently, however, owing to inflammatory paralysis of the diaphragm, the abscess collects above the liver and high under the ribs, shoving the lung up more than the liver down; this condition is given the special name of pyothorax subphrenicus; and care is needed to distinguish it from an intrathoracic lesion. The symptoms in this localisation are in the main as follows:—Great disturbance of general well-being, fever, severe dyspnœa, possibly prominence of the thoracic wall; lack of the respiratory excursion; tenderness in the intercostal spaces with, sometimes, œdema. If the abscess, hidden thus under the thoracic wall, contains gas, it is given the name of pyopneumothorax subphrenicus, first so called by Leyden. Percussion and auscultation here give a fairly clear diagnosis. With the patient sitting one finds from above downwards a clear pulmonary note, then a tympanitic note. Hippocratic succession and metallic sounds can be made out low down in the thorax. Immediately above on auscultation over the layer of gas one hears bronchial or amphoric breathing as a result of the transmission of the respiratory sounds of the compressed lung into an air-space.

Complications:—Of these the most frequent is inflammation of the pleura; the infection travelling usually through the intact diaphragm. Küttner (Beitr. z. Klin. Chir., 1903, Heft 1.) has demonstrated numerous lymphatics perforating the diaphragm and running both from peritoneum to pleura and in the converse direction; so that the infectious agent is probably carried directly to the pleura by the lymphatics. No doubt, also, the bacteria may *grow* through the diaphragm without being carried by the lymph stream.

In general the pleuritic exudate is of a milder degree of infection

than that of the subphrenic abscess. If the latter is gangrenous and putrid, it is purulent; if merely pus, the pleurisy is serous. The latter, however, may easily go on to empyema.

Occasionally the diaphragm is actually perforated; but the opening is usually small, and is situated in the vault.

In Grüneisen's tables of 60 casts, 40, *i. e.* two thirds were complicated by pleuritic lesions, as actually demonstrated in most of the cases by transpleural operations. In the earlier cases, a break of the abscess directly into the lung through peural adhesions was not very uncommon, and afforded one way of spontaneous cure.

Pneumonia is another not infrequent complication.

Pericarditis is a very fatal complication, all of these cases but one ending in death.

A rupture of the abscess into the free abdominal cavity occurs rather often. In a few cases it has broken into the bowel. It is very rare, in these days of early operation to find the abscess breaking through the skin.

Diagnosis:—Where severe symptoms develop during the treatment of a gastric ulcer or of an appendicitis, or where the plain evidences of abscess, a red and painful swelling, are present, the diagnosis is easy. But when, as is sometimes the case, the previous history yields no indication of trouble, and previously healthy people are seized with fever, dyspepsia, and pain in the chest, diagnosis is difficult; for the idea of subphrenic abscess is not apt to occur to one, and the dull note over the lower thorax is at first taken for a pulmonary or pleural affair. Subphrenic abscess may develop from a mere contusion of the side, to say nothing of pelvic lesions, or purely metastatic infection. In such cases, there is no finger-post pointing to the subphrenic space. When, further, a serous pleurisy complicates the abscess, as it nearly always does, it is easy to see how difficult a diagnosis from the physical signs alone may be. In this dilemma a valuable hint may be got from the X-ray examination, which will show a diaphragm shoved up and somewhat immobile on respiration.

If, however, gas is present in the abscess, the diagnosis is made easy by the recognition of the three layers—a flat note over the pleuritic exudate, a tympanitis one over the gas, and again a flat one over the pus.

Pneumonia is also hard to exclude. Frequently, the sudden onset with chill, pain in the chest, dyspnœa, together with dulness over the lower posterior chest, lead one astray. In other chronic cases, the dyspnœa, cough and expectoration are referred to a pulmonary lesion,

whereas, in truth, the cough is due to pleural complication, the expectoration to a breaking through of the abscess into the lung or to secondary inflammation of the lung, and the dyspnœa to paralysis of the diaphragm. Case reports show that mistakes in diagnosis along this line are the most frequent, and fraught with the most fatal consequences. Men like Kocher, Schlesinger, and Gerulanos have treated cases of pneumonia and found a subphrenic abscess on the autopsy table.

The first step in preventing such catastrophes is to remember the possibility of the thing. Once thought of, as Fenwick and Broadbent emphasize, the extremely sick look of the patient which is not like that of pleurisy or pneumonia, the dyspnœa, and this septic appearance will force one to a very careful hunt for subphrenic abscess.

Of course exploratory puncture is necessary. Yet a negative result, or even several such, do not exclude abscess. A positive result cannot decide between subphrenic abscess and empyema. The last decision is reserved for operation. Occasionally both are present, and cases have died because the surgeon opened the empyema and overlooked the other.

Prognosis:—How closely the outlook depends upon early recognition and early operation is shown by a comparison of Maydl's cases before 1894 with those reported since 1894.

Of Maydl's 178 cases, only 74 came to operation; and of these 48 per cent. died. Of the 268 cases (Grüneisen and Perutz) of the last decade, 215 were operated, with a mortality of only 27 per cent., that is an improvement of over 20 per cent. In the non-operated cases, the mortality was from 85 to 94 per cent. in both statistics. The most brilliant gain on the side of operation was in the gastric ulcer cases, in which Maydl's mortality of 70 per cent. was reduced to 30 per cent. in the later cases. In all the fatal cases, death was not due to the operation, but to complications, such as pneumonia, empyema, multiple abscesses, exhaustion, etc.

Treatment:—At the present time, practically the only treatment considered is operation with drainage; this may be either a laparotomy or a transpleural operation with rib-resection, according to the situation of the abscess. In the case of the latter, precautions must be taken to avoid infecting the pleura, either by packing or by suturing the two layers together before incising the diaphragm.. But frequently the lower part of the pleural cavity is already cut off by adhesions—this occurred in one-third of Grüneisen's cases,—and infection need not be feared.

Following this general consideration of the subject, Perutz proceeds

to discuss subphrenic abscess in a more special way, with reference to the origin of the abscess; *e.g.*, those of gastric origin, those of appendical origin, etc. The length of the article and lack of space prevent our giving further extracts, but the interested reader will find it exceedingly worth reading. Many apt case reports are given; and the whole subject is put in a clear light. *E. W. A.*

Charles Greene Cumston, M.D. "Remarks on the Present Status of Surgical Treatment of Hepatic Cirrhosis." *Boston Medical and Surgical Journal,* August 10, 1905.

For many years hypertension of the portal vein has been considered the cause of ascites, but, as a result of laboratory research, pathology, surgical physiology, and exploratory laparotomies, such purely mechanical cause has been shown inadequate to explain many of the cases. It is more in conformity with our present knowledge to attribute ascites to a peritoneal reaction. The large majority of authors attribute ascites to peritonitis in instances of the hypertrophic form of alcoholic cirrhosis. Kelynach's statistics of 1902 show that tuberculosis plays a very important part in the production of ascites, inasmuch as in 131 cases of undeniable cases of alcoholic cirrhosis the existence of tuberculosis was present in 23 per cent. This existence is seen especially in cases of large livers, and in some of these the tuberculosis appears to play the preponderating part. However, tubercular infection cannot apply to all cases, and it would seem reasonable to admit that there is also some disturbance in the peritoneal cells arising from the influence of a defective circulation, or from an intoxication due to hepatic insufficiency. The poisoned cell excreting salts, and particularly sodium chloride, will give rise to an exosmosis of serous fluid, because the presence of the salt in the peritoneum will cause isotony to be defective. With reference to treatment it is all important that an exact diagnosis of the cause and type of cirrhosis be made. Thus in cardiac cirrhosis operation must necessarily be a failure. So also in malarial cirrhosis the results cannot be very successful, seeing that these cases present a general complex process of intoxication and hepatic insufficiency. In the last class, nothing can be hoped for from omentopexy, but if the chronic peritonitis may be considered the cause of the ascites simple laporatomy without drainage should be preferred. Syphilitic cirrhosis will hardly ever be benefited surgically; while in the tuberculous type, if the infection be limited and the peritoneum appears to react, a laparotomy will frequently result in a cure of simple ascitic tuberculous peritonitis. In the hypertrophic type of the so-called alcoholic cirrhosis we find the

best results. They may be treated by puncture, incision, or omentopexy. In this type it must be remembered that usually tuberculosis is the principal etiological factor and it thus becomes a curable disease. In those cases where medical treatment and puncture have been unsuccessful, laparotomy without drainage is the writer's plan of treatment. The atrophic type is a much more serious condition. Here the liver cell itself is badly damaged as proven by the presence of urobilin in the urine. If the peritoneum is healthy, omentopexy may be done, and this will prevent the production of anastomoses in the lower part of the œsophagus, the anal region, and the system of Retzius. If the peritoneum is markedly diseased omentopexy should only be considered if portal hypertension menaces the patient's life, and is at best an emergency operation. Where we have an infection of the gall-bladder added to the cirrhotic condition of the liver omentopexy, combined with drainage of the gall-bladder may prove satisfactory. In view of the great difficulty of arriving at a definite diagnosis from a purely clinical examination exploratory laparotomy is advocated on account of the great help in diagnosis and its curative value.

James A. Kelly, M.D. "Dislocation Forward of the Atlas, with Fracture of the Odontoid Process of the Axis." *Annals of Surgery,* August, 1905.

This rather unusual accident was caused by a man, while intoxicated, falling and striking his head on a sharp corner. He was brought to the hospital for the scalp wound, but further examination showed the above condition to exist. The head, held rigidly, was in a position of extreme dorsal flexion and rotated slightly to the right, the chin hung depressed upon the chest. There was moderate spasm of the neck muscles, while over the posterior aspect of the upper cervical vertebræ there was marked swelling and tenderness. There was no crepitus, but the spinous process of the second vertebra was prominent, and the distance between the process and the occiput was increased. There were no symptoms of motor or sensory paralysis. Treatment consisted of the application of a well-fitting felt collar and placing the patient in a semi-recumbent position upon a head rest. He left the hospital about one month later and began work as a day labourer. The absence of pressure symptoms prove conclusively that a fracture of the odontoid process must have been present in combination with the dislocation, since anatomical preparations show that such would have occurred unless the odontoid process had been fractured.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXXIV. NOVEMBER, 1905. No. 11.

OPENING ADDRESS: McGILL MEDICAL FACULTY, 19TH SEPTEMBER 1905.

BY

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New York.

For my presence here and the permission to address you, I am indebted to the kind invitation of your faculty. They have prompted me to speak to you, my fellow students, of medical education in my early days, of my contemporaries medical and lay, and some other subjects. Unfortunately, that theme demands that now and then I shall have casually to mention myself not as a co-operator, it is true, but as an interested looker-on, when great things happened and good and great men worked for the realization of what you in these days are harvesting as a spontaneous and legitimate heritage.

Indeed I have lived under the eyes of, and with great men and during the development of modern medicine. The history of these times should be known to every student of medicine and of social science. For truly as we cannot comprehend any country without the knowledge of its origin and the circumstances under which it grew, and of the men who thought and fought for it, so there is no way of understanding and appreciating modern medicine without a fair acquaintance with its annals.

What you are expected to learn in four years is a part of the results of previous labors performed during hundreds, ay, thousands of years, by legions of men of industry, honor, and sometimes genius. What any single generation of men has created, however, should be considered an episode only. Part of such an episode I shall, at the suggestion of the great and good men assembled on this platform, recall to your mind as belonging to our common history.

I began the study of medicine only fifty-eight years ago. Now, you have often noticed that in a clear atmosphere a distant height separated from you by ever so many extensive ridges and deep valleys that your weary feet have measured ever so often seems to you near by, almost within reach. Thus that early time appears to me, looking backward

these six decades replete with the exertions of persevering men working in the same direction, for the same ends, in different ways, it is true, in laboratories and clinics, all in behalf of the welfare — individual and collective — of mankind.

I studied medicine in the three universities of Greifswald, Gœttingen, and Bonn from 1847-51; vegetated in Prussian prisons until 1853, and tried to practice medicine in Manchester, England. But old England and I did not get on very well with one another; at least I did not. Since the end of 1853 I have enjoyed the always generous hospitality of my second and kinder motherland, the United States of America. That is all there is of *me*.

Some of you may be interested, however, in learning why any young man should study in three universities, in place of one, as is the custom with us. Part of the German Universities date from the Middle Ages —those of Prague (1347) Vienna, (1365) Heidelberg (1346) Cologne, (1388) Erfurt (1392), both of the latter now extinct, from the fourteenth century. The more recent ones have readily adapted themselves to the inherited customs. The search of adventure, the eagerness to see distant or foreign parts, or the reputation of a famous teacher would draw hosts of young men away from their fireside and neighborhood. A personal instance of that I may be permitted to mention. When I left the "Gymnasium" I knew the world from books—that is, not at all. A few miles adjoining my village and my college town formed my actual horizon. So I selected a university on account of its distance from my home. Even in that respect, however, I could not satisfy my longings to their fullest extent; for the two ends would not meet, that is, the fare between my village and Konigsberg was excessive compared with my means.

Now when I had been in Greifswald three semesters and had taken a birdseye view of what medicine might imply, I felt the necessity of studying more chemistry and pathological anatomy. You wonder, you men of the twentieth century, what I may mean. Now at that time there was no Adami in Greifswald; there were, alongside of Vienna where Rokitansky taught, only two places in all Germany in which pathological anatomy could be learned. One of them was Würzburg, there was Virchow; the other was Gœttingen there was Frerichs. So to Gœttingen I went in search of pathological anatomy. My notes of that year and my clumsy drawings I still esteem very highly. At the same time I looked for the advantages of chemical laboratory work under Wiggers and Woehler. You see, I have already, mentioned names to you that will never disappear from the history of medicine. In Goettingen I remained a year only, on account of the inferiority of clinical instruction.

Our senior professor of clinical medicine for instance was never satisfied until he tortured out of every patient the admission that some time or other be had taken a drink of cold water. A "cold drink" was his universal etiology. In that respect he was worse than even Cotton Mather who, according to William Sydney Thayer's article in this September number of the Johns Hopkins Hospital Bulletin knew all about hell—for other people—and witches and something of medicine, and preached: "Never take water or anything else, cold, when you are hot with labor. There is death in the pot."

It is true Wilhelm Baum had come from Greifswald to take the chair of surgery, but I wanted modern methods of clinical diagnosis, such as Friedrich Nasse was teaching, guided by the French and the new Vienna School. So I went for my last three semesters to Bonn. This custom of changing universities had and has the disadvantage of precluding devotedness on the part of students to their alma mater and substituting, if anything at all, attachment to a revered and famous teacher.

Besides, in Germany all the Universities are Government institutions. There are no medical schools unconnected with a big State University, and there was and is no personal, no heartfelt interdependence between the student and his intellectual mother.

But for Germany this interchange of Universities may have had a good political influence though it was counteracted by the ambitions, greeds and jealous tyrannies of the hundreds of principalities finally overthrown by the first real Napoleon, a century ago, and of the thirty-eight territorially or mentally and morally inferior countries of my time. Even to-day, you know, they have not yet consolidated into a united Germany and never will until Germany will be a republic. Young men would congregate in a University from all parts of Germany and could not help being influenced by diversified intercourse. I have no doubt that in spite of the demoralizing influences of the absolutistic governments, the concourse of young men belonging to distant parts of the country must have exerted—when the time matured,—a unifying effect.

Let me now speak of medicine as it was in Germany a very few years before I commenced its study. Stieglitz, an old and learned practitioner, expressed himself in 1840 as follows: German medicine has sunk so low and is so emasculated as to require any sort of shaking up. Whatever gives it a new direction will be wholesome, though new errors or possibilities may result therefrom." And Paulus, a professor of theology at Heidelberg, is quoted by Kussmaul as having stated that the philos-

ophy of Schelling, so prevalent during almost half a century, was dangerous to medicine; its influence was 'tragic", it amounted to "legerdemain;" medicine was injured by speculations evolved at the desk, and German medicine was inferior to that of France on account of its bad methods.

This bad method is characterized in a few words. Like Plato of old the Germans of several centuries, down to 1850, constructed their theories without a material basis; facts were disregarded or explained away a priori, new systems were constructed out of sheer imagination or on the strength of insufficient or distorted knowledge. One wanton system would follow another; not in Germany alone, however. Thus Van Helmont, Sylvius, iatromechanism with Paracelsus as its principal prophet, Fr. Hoffman, Stahl, the Solidarists, the Humoralists, John Brown, Rasori and his contrastimulus, animal magnetism, nature-philosophy, Hahnemann, Rademacher, Broussais and Bouillaud, all had to be outlived and overcome.

The actual progress of medicine began when the influence of mere theorizing was broken. Gradually the sterile nature-philosophy of Schelling and the equally unprofitable dialectic contortions of Hegel ceased to draw minds into the abysses of speculation, and German textbooks and monographs were no longer all written in hopelessly unintelligible language. The first part of the nineteenth century, however, belongs to France, its latter half only to Germany. That is why the terms "French medicine," and "German medicine," are unduly prominent in medical terminology. It is only now that we begin to speak of medicine without any regard to nationality. It has become international, cosmopolitan. The fraternization of mankind seems to grow its first roots in science; that, at least, has no Russia of its own to exterminate, or to revolutionize.

I am fortunate in having studied during an active period. Let me report to you what happened in those very few years, and congratulate you upon the wealth of scientific conquests laid at your feet without your co-operation. By so doing I may impress upon your minds the necessity of paying attention to the constantly increasing results of the work of this very year, of your year, of every year.

In 1847, my first medical year, Hermann von Helmholtz (1821-1894) published his address on the preservation of force; ether anaesthesia was used in obstetrical practice by Hammer of St. Louis (1818-78), in dentistry by Delabarre (1819-1878) of Paris; Justus von Liebig (1803-1873) published his researches on meat; prismatic glasses were employed by Kreke and Franz Cornelis Donders (1889) the great Dutch

ophthalmologist; ether and afterwards chloroform were introduced into Scotch obstetrics by James Young Simpson (1811-70) of Edinburgh. The scapula was removed by Sir Wm. Ferguson (1808-77); Faradization was recommended by Duchenne (1806-75) in that form of paralysis which has long been known by his name. Unstriped muscular fibres were described by Rudolph Kœlliker (born 1817); Semmelweiss (1818-1865) discovered at the autopsy of Professor Kolletschka, (1803-1847) who died March 13, 1847, of sepsis contracted during an autopsy the same lesions that were found in puerperal fever. He also found that in the wards of puerperal women which were visited by the students who worked in the dissecting rooms, a larger percentage would die than in those accessible to the midwives only. They did not dissect. He reduced the mortality by more than two-thirds, by merely obliging the students to wash in calcium chloride before entering the sick wards. He learned from clinical observation what Lister learned from Pasteur. He established the contagious character of puerperal fever, like Oliver Wendell Holmes, who in 1843 wrote his immortal paper in the New England Medical Monthly. *They* shared a similar fate, with great differences, it is true. Holmes was on account of his observations ridiculed by Hodge and Meigs, the obstetrical sages of Philadelphia, until Hodge and Meigs found themselves alone with their prejudices and ignorant obstinacy,—and enjoyed smilingly the admiration and veneraration of the English-speaking world fifty years afterwards. Semmelweiss was persecuted by Braun, Scanzoni and I am sorry to say by my friend Spaeth, who would not admit that their lack of methods had killed thousands of women and newly-born, was driven out of Vienna and angered into a lunatic asylum. Posterity had to come to the rescue. As a rule, the benefactors of mankind have been crucified or starved—all is considered corrected by a monument.

1848. Crusell (1810-58) expounded the indications of galvano-caustics, mainly in strictures, carcinomata, and ulcerations. (Bull. Phys. Math. de l'Acad. Impér. des Sciences de St. Petersbourg). He claimed chemical effects only, denying the vital action of galvanism.

The quantitative analysis of urea was taught by Robert Wilhelm Bunsen, (1811-1899) the same who afterwards, in co-operation with Kirchhoff founded spectral analysis.

Per Hendrik Malmsten (1811-1883) discovered the trichophyton tonsurans (Hygeia VII) and balantidium coli.

1849. J. Arnott (1794-1885) taught the employment of cold for the purpose of procuring anaesthesia.

Claude Bernard (1813-78) performed his "*piqure*" of the fourth ventricle and caused diabetes.

Pollender, a veterinarian, discovered bacilli in the blood of animals infected with anthrax, preceding Brauell (1855) and Davaine, and Robert Koch (1876), (Ferd. Cohn, Beitr. Zur. Phys. d. Pflanzen).

Jos. C. Hutchinson (1827-1887) invented the spirometer.

Charles D. Meigs (1792-1869) found thrombosis in veins to be one of the causes of death in puerperal women.

Marion Sims (1813-83) cured a vesico-vaginal fistula.

In 1850 another American, William Detmold, of New York, (1808-1895), opened an abscess in the cranial cavity and was roundly abused for claiming an impossible thing, as an American swindler, in so high-toned a German magazine as the sixth volume of Virchow's Archives.

The velocity of nerve irritation was measured by Helmholtz.

J. Walker proved the infectious character of secondary syphilis.

In 1851 Helmholtz invented the ophthalmoscope and studied the duration and course of the induced current.

Virchow discovered the sheath of the cerebral vessels.

Bernard explained the vasomotor function of the sympathetic nerve.

Romberg (1795-1873) published his studies in Tabes dorsalis.

All this happened while I was a student. You recognize in my fragmentary enumeration facts of import. Very soon after my graduation in 1851, however, I was no longer in a position to follow the rapid current of events. I afterwards learned that within two years Helmholtz had measured accommodation, Cohn proved the vegetable nature of bacteria, Schrœder demonstrated the bacterial nature of fermentation, as the glycogenic organ, Vierordt constructed his sphygmograph, Küchenmeister noted the connection of the tænia with the scolex found in pork, Bigelow performed the first resection of the neck of the femur, John Hughes Bennet coined the term leucocythæmia, and Moleschott had written his "circle of life"—"Kreislauf des Lebens," for a long time the bible of materialists. One of the most important discoveries was that of Funke (1852) and Lehmann (1853) who proved hæmoglobin to be a crystallisable unit capable both of binding and of eliminating oxygen.

Thus I found the world was progressing. Medicine had contrived to throw off the fetters of transcendentalism and had embarked irrevocably in its developement as a part of biology with only one goal—to seek truth wherever it was, and with one ideal purpose viz. the benefaction it could bestow on mankind by curing or preventing disease.

There is a trinity of doctrines which have redeemed medicine and made it part of biology;—1st, *Experimental Physiology*. It was founded by the French, mainly Magendie, Flourens, Bernard, Fourget, and Paul

Broca. England furnished Charles Bell, Marshall Hall, and William Bowman; and Germany, Johannes Müller. 2nd. *Clinical Diagnosis based on Pathological Anatomy,* as developed by the Vienna School. It is represented by Rokitansky and Skoda. 3rd. *Experimental Pathology,* which found its spokesmen in Virchow and Traube of Berlin. That is why the names of Paris, Vienna, and Berlin are immortal in our science and art. I say, science and art. What I want you always to remember is that science and art should never be separated in the consciousness of a medical student and practitioner. Our science is biological; our art is therapeutic, that means preventive, dietetic, pharmacal, surgical, obstetrical; our profession exists for the purpose of therapy. The translation of "therapy" in its most comprehensive meaning, is service,—service to the individual or commonwealth. Cicero tells us: "nisi utile est quod faciamus, stulta est gloria"—unless there is some good in what we are doing the glory of it is sterile; and Benjamin Franklin seems to have translated it in the homely but impressive words: "What signifies philosophy that does not apply to some use."

The permanent regeneration of modern medicine originated in German Austria and in Germany about the fifth decade of the nineteenth century; that is the very period of European political and, in part, social revolutions. A philosopher would find ample opportunities to demonstrate the equable and contemporaneous growth of divers of manifold historical evolutions. Some of the men who participated in or directed the work, both political and scientific,—though in years I was an immature boy—were at that time, or afterwards, my comrades, or friends, or teachers. Of some I shall speak. Personal relations I had none, however, to Rokitansky and Skoda.

Carl Rokitansky (1804-1878) began his revolution of pathological anatomy in 1836 with a paper on intestinal obstruction. (Medic. Jahrb. des K. K. Oesterr. Staats). He published the first part of his special pathological anatomy in 1841, and his general pathology in 1846.

I wish you would study particulars in any great historical description of our science. You will then understand why pathological anatomy of the human body, as he taught it in all its stages of formation and retrogression—of hyperæmia, exudation, new-formation, and disintegration—was a revelation to the medical minds of the nation, and soon afterwards of the globe.

But even he was one-sided and human. He never could divest himself entirely of the influences of his bringing-up. Humoral pathology possessed him sufficiently to make him create the theory of crases

(blood-mixtures) which induced him, and still more his followers, to believe in a croupous crasis, which was subdivided into an α, β, γ class, and an albuminous, aphthous, exanthematous, and a puerperal crasis. His colleague, Engel, fought him; it took a Virchow, however, to annihilate him, and never was Robitansky greater than when he acknowledged his defeat by the young giant of Berlin.

Joseph Skoda (1805-81) published an essay on pericarditis in 1834, his first paper on percussion in 1836, and his monograph on percussion and auscultation in 1839. In his studies and methods he followed the great Frenchman Laennec. It is true he adopted the ontological character of Laennec's reasoning, even crases were accepted under the influence of Laennec and Rokitansky, but both Rokitansky and Skoda cut loose from the verbose ignorance and supercilious stolidity of German medicine. Helm the obstetrician, Kolletschka the pathologist, Schuh the surgeon, and Hebra the dermatologist were eager followers and cooperators. Thus you may well imagine that Vienna became the Mecca both of Germans and of foreigners.

Meanwhile criticism was not idle.

One of the involuntary jokers, a Dr. Philipps of Berlin, that had not yet been waked up by Virchow, made himself ridiculous by trying in 1845 to ridicule Skoda's work of 1839, and in the same year a Dr. Krüger-Hansen in "Praktische Fragmente" annihilated auscultation in the following way. Listen:

1. A chaste maiden would not submit to uncover her bosom to the inspection of a young Aesculapius who is a stranger to her or who may not enjoy the best reputation.

2. If auscultation were necessary deaf practitioners who all wish to continue their practice would be badly off.

3. It is impossible to express or to systematize by language, inadequate as it is, the sounds and murmurs inside the chest. Literally, he says: "Any scientist is hereby challenged to express in words the song or the din of birds."

4. It is only a hiding of practical ignorance "for the practitioner to apply his ear and to look learned as if sitting on the Delphian tripod."

5. Only such as have weakened eyes and ears should aid them by spectacles and stethoscopes.

6. "How great would be the expenditure for patients living in the country if it were necessary to call a doctor even for one's servants in order to establish an indication by means of a stethoscope."

7. But 'if one would send such an instrument into the country and ask for a report, how would an uncouth workman who is used to the flail manage the thing, and what sort of nonsense would be his report?"

8. Auscultating doctors cannot prove that more and speedier recoveries result from the treatment; "if they mean to prove the correctness of their diagnosis, they must first have their patient on the autopsy table."

Remember that was only 60 years ago, twenty-five years after Laennec's publication, six years after Skoda's book appeared, and only two years before I began the study of medicine.

Still the wakening was rapid. In 1841 Wunderlich, with whose name you are familiar, as that of the popularizer of clinical thermometry in his journal and afterwards in his book of 1868, wrote a pamphlet on French medecine and the young Vienna school, and its fertilizing and reforming effects; influential new journals were started by him and Roser, by Henle and Pfluger, by the faculty of the University of Prague, and one for pathological anatomy by Florian Heller (1813-1871); Good text-books made their appearance, such as Hœfle's "The Microscope at the Sick Bed," and Gaal and Heller's "Clinical and Chemical Diagnosis," not to speak of Constatt's handbook in four volumes on Pathology and Therapeutics.

Meanwhile, what became of therapy? Rokitansky's occasional therapeutic suggestions could not possibly mean much; Skoda, who directed the clinical hospital, made a number of poorly managed experiments with drugs which convinced him whose attention was taken up with diagnosis, that therapeutics was a hopeless problem. The Vienna nihilism had no more outspoken prophet however than Joseph Dietl (1804-78), professor in Krakow. Says he, as late as 1851; "Our practical work does not compare with the amount of our knowledge Our ancestors laid much stress on the success of their treatment of the sick; we, on the result of our investigations. Our tendency is purely scientific. The Physician should be judged by the extent of his knowledge and not by the number of his cures. It is the investigator, not the healer, that is to be appreciated in the physician. As long as medicine is art it will not be science. As long as there are successful physicians, so long are there no scientific physicians. Our power is in knowledge, not in deeds."

Indeed there were hosts of medical men who never thought of their diseased patients, but only of the ontologic "disease," and looked upon the doctors who wished to save their patients as weak characters and mediocrities.

The upshot of all this was that the patient who you may think in your innocent minds had the pardonable wish to get well, had nothing to do but—

1st. To be percussed and auscultated by Skoda;

2nd. To be autopsied by Rokitansky:

3rd. To see to it that the diagnosis and the result of the autopsy agreed. This however he could not conveniently do, though he was permitted to be present.

And another results was that the public was compelled to apply to homœopaths, dealers in animal magnetism, water-cures, masseurs, gymnastics, or to Johann Gottfried Rademacher (1772-1849) who about the same time elaborated a system taken from Paracelsus according to which all diseases were classified according to whether they were curable by sodium nitrate, or by iron, or by copper. That is, all diseases were subsumed under the three heads: Saltpetre diseases, iron diseases, and copper diseases. His big book was published between 1842 and 1849.

All these either misguided or down-right quackish men held out some hope to the suffering and offered some more attractive proposition than merely the autopsy table of the scientist. But the times were greater than they, and the wheel of history moved rapidly. One of the few men who knew his mind and that of medicine, and had his hand on the pulse of mankind, was Oppolzer. *

In his inaugural address at Leipzig (1848) he expressed himself in the following words: "Those are greatly mistaken who believe that a modern physician is he who examines a patient most carefully, auscultates and percusses, and is satisfied when the autopsy corresponds with his diagnosis. Such a medical man does not comprehend that the most sublime aim of all medical service is the healing of the sick." I remember the time quite well. It was during my third semester in Greifswald, when the German revolution of 1848 spread over the land like a wildfire, burning in the hearts of many of us, unfortunately, however, unable to burn the tottering thrones. The magazine containing Oppolzer's address had just arrived, an older fellow-student jumped on a table, waved the paper, and cried out: "Here is another revolution, a real declaration of independence. Hurrah for the revolution in medicine!" Never before had any man united like Oppolzer science and practice, never was diagnosis made anatomical or therapy based on indications as by him. Gradually even the patient became dissatisfied unless they were examined and their cases diagnosticated. Luckily for them they are still of the same mind.

To account for my selecting Göttingen as my second university, I spoke of my search after chemistry and pathological anatomy. Friedrich Woehler (1800-82) was a teacher in the Technical school in Berlin before he became a professor in Göttingen. It was in Berlin that he

* (From Prague he was called to Leipzig in 1848; thence in 1850 to Vienna, where he died in 1871.)

synthetically compounded urea and thereby became the founder of organic chemistry and the originator of an interminable number of discoveries. As I worked under him several months in succession, I took the liberty one day to ask him whether he thought he would some day be able to construct more organic matter out of inorganic substances, for evidently he had proven there was no boundary line between the organic and the inorganic world. The big bright eyes and the wrinkled face of the little man smiled and he said: "Just wait and ask me again Christmas day—in the year 2000." He did not wait long enough but still he saw a small part of his teaching put into practice by his pupil Fr. Hofman, the unselfish discoverer of the anilin dyes and other coal tar products which are now utilized in industry and in medicine.

Theodor Frerichs (1819-85) was one of the most many-sided medical scholars I have known. He was at that time adjunct professor and appointed to teach pathological anatomy. Being a thorough chemist, he also delivered courses in which chemistry and pathological anatomy were treated in their relation to clinical medicine. In those young years of his, he performed his epoch-making labors for Wagner's Handbook of Physiology. He was a man of few words all his lifetime, slow, deliberate, every word with a meaning and a purpose, both when he talked and when he wrote. Our first conversation was a follows: "New student? which semester?" Fourth. "Where from?" Greifswald. "What are you looking for in Göttingen?" Pathological anatomy. "Nothing else?" Whatever is going, but there is no pathological anatomy in Greifswald. "All right, the laboratory will be open for you all day." What about Sundays? "Did you have Sundays in Greifswald?" He became Professor and director of the clinic in Kiel, in Breslau, and in Berlin. We know him best by his remarkable contributions to the Handbook, by his "Bright's Disease of the Kidneys," (1857) his "Klinik of the Diseases of the Liver," (1858) and his writings on uræmia, on diabetes (1884), and his discovery of leucin and tyrosin in the urine of the yellow atrophy of the liver.

In Göttingen, however, I found more than I had looked for.

Hermann Lotze (1817-1881) must have had a great influence on the youthful minds of those who listened to him during his long professorship. I attended his lectures in the winter following the German revolution of 1848, and was fully prepared to accept anything revolutionary in the field of science. Moreover, he gave the lie to those who claim that an eloquent lecturer is rarely an efficient teacher. He was both: the sickly looking man warmed your heart while he added to your mental stores. I was fully prepared to appreciate him, for the prerevolutionary

time had made me acquainted with the materialistic tendency of many parts of philosophical literature. The iatro-mechanic school of the renaissance—that of Paracelsus, Helmont, and Sylvius—looked upon the human body as a purely physical organism; with René Descartes (Cartesius) (1596-1650) I was somewhat familiar, and La Mettrie's "L'homme machine" (1709-51), the product of encyclopedistic France, had been my gospel. Thus it happened that I was greatly struck with Lotze who both in his book on "General Pathology and Therapy Considered as Mechanical Natural Sciences," (1842, 2nd edition, 1848) and in his lectures taught the ascendency of a mechanical legality in all organic and inorganic life. Still he would happily clothe these views with his inborn idealism and look for connections with the principles enunciated by Spinoza and by Leibnitz, which many years later he published in the three volums of his famous "Mikrokosmus." (1856-64). Thus his materialism was of an idealistic and refined sort. Altogether I warn you not to scoff at materialism as pulpits do and not to consider it a system or a dogma, but a principle which may be evolved out of the great modern discoveries in chemistry, physics, and physiology. According to their results, we know of no force or function which is independent of matter. For the naturalist, the separation between function and organ does not exist. We have no dealings with those who will force orthodox religious disputes into our studies and laboratories. For theology and science may and must travel their separate roads, and toil in their special fields. Otherwise, they do not necessarily exclude or always antagonize one another. Indeed, in the German Association of naturalists and physicians at Innspruck, in 1869, I met Carl Vogt, the iconoclast, and a number of Catholic priests who were proficient entomologists and botanists, working at the same table. It is from that point of view that Huxley declares "atheism untenable. Where we know nothing, we can neither affirm nor deny with propriety." That is why he invented the appropriate term "agnosticism" and "agnostic." The question how much we or our successors may know about the intricate question of the existence of a mind or soul independent of the brain and body, or one that is absolutely connected with, or rather dependent on, organic anatomy, are moot questions we may safely leave to posterity to answer. Indeed, the world is filled with many more problems half solved or unsolved, and every new truth opens a vista of things unknown.

Surely when a physiologist like Emil du Bois Raymond in his discussion on such topics declared before his peers of the great meeting of Leipzig in 1872, "ignorabimus"—we shall not know—"and here are the boundaries of the knowledge of nature," it looked like theological bold-

ness coupled with senile indolence. At all events, modern psychology is not afraid of studying with biologic methods the questions connected with the organs of thinking. Psychophysics is part of psychology. Gustav Theodor Ferhner (1801-1887) of Leipzig, should be considered its founder, but Wilhelm Wundt (born 1832) is now recognized as the most exact investigator of cerebral—so-called mental—functions, and the recognized head of the laboratory school of psychologists all over the world. They do no longer fear to apply their intellect to the study of their intellect. They are not even afraid of attacking problems left untouched by Julius Robert von Mayer (1814-1878), the author of the theory of the preservation of force. This theory, or rather this "law of the preservation of force", which is generally recognized, has become indispensable for biological research. It has finally annihilated the vitalistic theory, that is, the assumption of a special vital force; and has proven the sufficiency of chemistry and physics for the purpose of explaining the phenomena of biology and pathology.* Thus, on his lines, Robert Mayer has accomplished as much as Charles Darwin in his great books of 1859, 1868, 1871, and 1872 for biology, history, and archæology. Robert Mayer's name will be immortal on account of what he has achieved, and should not suffer because there are things he left undone, and truths he left unuttered. In regard to the latter he is, perhaps, slightly guilty.

Indeed, I was present when, in 1869, he delivered an address: "On the Necessary Consequences and Inconsistencies of the Mechanical Theory of Heat," in which, possibly overawed by many attacks by the always militant clergy, he postulated that in the world of intellect the laws of the preservation of force were not necessarily so valid as in the physical organism. Verily he was a queer example of greatness and mediocrity. He was a medical officer in the Dutch navy, and later a practitioner in a small South German town. Under the equator he noticed the altered metabolism of the sailors and the change in the color of the blood during venesection. That was enough to awaken his interest and to lead to results as great as the gravitation theory of Isaac Newton which is attributed to the falling apple. But he was an indifferent writer. His first publication of 1842 was hardly noticed, only that of 1845, under the title "Organic Motion in its Connection with Metabolism," (Die Organische Bewegung in ihren Zusammenhang mit den Stoffwechsel) made his name and his theory famous. I found his utterances halting and unimpressive, both in private conversation and in public, and he did not improve even in his fights for priority.

Nearest to him in line and in the results of his thinking came James

* Cf. Julius Pagel, Gesch. d. Medicin, Berlin 1898.

Prescott Joule (1818-1889) of Salford who delivered in the Section for Mathematics and Physics of the British Medical Association, 1843, an address "On the Calorific Effects of Magneto-electricity and the Mechanical Value of Heat, "and Hermann von Helmholtz (1821-94). The latter's address on "The Preservation of Force," was delivered in 1847 before The Physical Society of Berlin. Both Mayer and Helmholtz must be credited with the elaboration and the final acceptance by the world of the great teaching. It is true that what they taught had been imagined or even asserted before. Titus Lucretius Carus said nearly 2000 years ago: "New things will always arise from the disintegration of others." Marriotte has the following: "La nature ne fait rien de rien, et la nature ne se perd point". Leibnitz formulated the doctrine of the preservation of force mathematically in 1686; the Marquise du Chatelet expressed cognate views in 1742; and Lavoisier taught the indestructibility of matter. But the world had after all to wait for Mayer and Helmholtz before previous suggestions were generally welcomed and adopted. In connection with all this you might learn one thing, my young friends, you should not forget. You need not be attached to a big laboratory or live in a town counting its inhabitants by millions to become famous and a benefactor to mankind. Robert Mayer was a physician in a small town in South Germany, like McDowell and Marion Sims in America.

Conrad Martin Johann Langenbeck (1776-1851) was professor of anatomy, surgery, and ophthalmology. He extirpated the uterus several times, improved the technique of amputations, of ligatures, of lithotomy, of cataract, and pupil operations. Of all these clinical feats I saw specimens in his clinic. It must strike you that there are men alive to-day who antedate antisepsis and asepsis, and you wonder at the kind of results obtained by men who worked in the anatomical and the surgical theatre the same day, and every day. What at those times you could have seen all over the world, however, I participated in myself. For when I was professor of the diseases of children in the New York Medical College, 1860-64, my surgical colleague was John Murray Carnochan (1817-1887). I admired him much, both on account of his learning and his dexterity. In one respect only we disagreed. I saw forty-five years ago a great many cases of diphtheritic croup and performed numerous tracheotomies. It was nearly thirty years before the era of intubation. Once in a faculty meeeting, he enquired: "Does Jacobi not cut too many throats?" Still, he was a great surgeon indeed, who ligated (1851) the femoral artery for elephantiasis, excised (1850) the second branch of the trifacial nerve centrally from Meckel's ganglion, resected the ulna (1853),

wrote on hip joint luxation, on lithotomy and lithotripsy, and on congenital luxations (1850). Carnochan dissected the dead body and operated on the living in the same amphitheatre, on the same table, in the same purple gown, on the very same day.

Now, to return. When I arrived in Göttingen, 1848, the story was told of an English surgeon who was a guest of Langenbeck's. A femur was to be amputated, the patient on the table; Langenbeck took the knife and the Englishman his spectacles to adjust them. When he was ready to look on, the thigh was in the basket. Rapidity at that time stood as high as safety at present, indeed, rapidity was demanded for safety. Remember, however, there are those at present who assert that safety would be greater to-day also if the temptation of losing time over anæsthetising and operating—mainly the former—were not so great, and the respect for myocardial degeneration and for the jeopardy of the splanchnic nerve not quite so small.

As it was my object to make you acquainted with really great men only, whose memory should be greatly preserved by all who are interested in the progressive history of medicine, I turn to my final three semesters which I passed at Bonn.

Freidrich Nasse was more than a kind, humane, and pious physician and teacher; he was one of the few—indeed, the first—German clinician who introduced the findings of Laennec and Skoda into German medical instruction. You see how fortunate I was. Born in 1778, he could never, it is true, divest himself entirely of the influence of Schelling's so-called "nature-philosophy" and of Mesmer's animal magnetism. Indeed, in 1850, while I worked in his clinic, he wanted me to go to Holland to magnetize a hysterical young lady. She had to get along, however, without my ministrations. For many years he had been intimately connected with Ennemoser, who explained the relations of Adam and Eve to be founded on animal magnetism, and taught the method of magnetizing the trees in the field and the child within the maternal womb. As I have mentioned, the first forty years of the eighteenth century were the period of the greatest humiliation of German medicine. Most of its literature was steeped in gross obscurantism and its teaching and language were mostly unintelligible. In spite of all this, Nasse, who was first a practitioner in a small city, before in 1818 he became professor in Bonn, recommended the use of the thermometer in scarlet fever as early as 1811,—it was introduced and popularized by Wunderlich half a century later—published experiments on the processes of elimination in connection with the changes of the blood caused by respiration in 1816, and on combustion and respiration in 1846, on regeneration of nerves and occasional restitution

of their functions in 1839, and many essays on the physical causes of mental diseases.

To us he was a paramount blessing in this way. Until the middle of the nineteenth century the diagnoses were mostly symptomatic. For instance, it was generally claimed that "gastricismus"—perhaps you would call it dyspepsia now—would change into gastric fever, gastric fever into typhoid; pneumonia and pleurisy were chest diseases; endo- peri- myo-carditis were simply carditis; and cyanosis, fever, dropsy, jaundice, constipation, diarrhœa, apoplexy, and paralysis were recognized as full-fledged and scientific diagnoses. Indeed, we have not altogether worked away from this self-satisfied indefiniteness; for our successors will have to correct us for still making the diagnoses of rheumatism, of myasthenia, of neurasthenia, and of epilepsy, and for coupling with the names of writers a disease or a complex of symptoms,—such as Friedreich or Addison, Basedow or Graves, or even Banti, and for believing that we have thus accomplished the quintesssence of sound and scientific diagnoses.

Nasse taught us to avoid such names and such symptomatic diagnoses. They were permitted as denominations for a class or complex of symptoms, but he insisted upon the finding of anatomical causes; that is why nobody was a more regular attendant on autopsies than our revered teacher. But his principal method was the early adoption of auscultation and percussion as taught by Laennec. Indeed, this great Frenchman credited him with being one of the few Germans who introduced the new gospel into his country. For hours, daily, during the three semesters I was in Bonn, he drilled us personally in percussion and auscultation. With the exception of Krukenberg in Halle, he was between 1830 and 1840 the only public teacher of clinical medicine who treated it as a part of natural science. He died in 1851. I was one of the last two of his young men whom he graduated.

The clinical advantages we had in Bonn were probably superior to those enjoyed in any other university; for the professor of surgery and of obstetrics imitated the example given by Nasse. As the medical school was but small, our relations to the professors and the patients in the hospital—which contained about eighty beds—became quite close. Large classes cannot enjoy such advantages. The amphitheatre teaching in Berlin, Vienna, New York, Philadelphia, and other large cities, afford but insufficient opportunities. That is why so many small practical classes have to be formed there, under assistants and adjuncts. A moderate number of patients thoroughly studied outweigh by far a large number of cases counted, but slurred. A hundred students driven along by a hundred bedsides, unable to examine personally, un-

able perhaps to see, will develop into a hundred doctors who will have to attain their knowledge from a future practice or a cemetery of their own. They may learn at the expense of their patients, or may make the same mistakes a hundred times. One hundred mistakes are then called experience. The facilities I had and the methods I learned at Bonn more than a half century ago are still superior to those of nearly all our present American medical schools, and were the models I introduced into my teaching when I became connected with American institutions. Not only did I for the first time in America specialize the teaching of the diseases of children, but the first real, active bedside-instruction was exhibited under the very roof of the New York Medical College, with which I was connected from 1860 to 1864 at the expense of the enthusiastic faculty and some of our friends. In that year, 1864, the College closed its doors.

Karl Wilhelm Wutzer (1789-1858) was professor of surgery and ophthalmology.* Before he knew anything about Marion Sims' efforts and achievements, or those of his predecessor, Mettauer, whose history Ben. Johnson has lately written with a loving hand for the American Surgical Association, he operated for vesico-vaginal fistula, with more or less favourable results. When I assisted him in 1850, chloroform had been introduced and facilitated the operation which, the instruments being clumsy and the methods defective, lasted many hours sometimes and had to be repeated. Jobert de Lamballe was in Europe his only example to follow. Wutzer was, like Fournier and Erb after him — perhaps even more so than they — a great believer in the ubiquity of syphilis. With twinkling eyes he would look up to us suggesting that "everybody is a little syphilitic."

Moritz Ernst Naumann lectured on general pathology. He had written a big book on that subject in six volumes. But he was a religious and kind-hearted gentleman; that is why he did not expect us to read them.

They were not all of that turn of mind. The Professor of Materia Medica, Christian Heinrich Bischoff, having threatened me and promised himself to "pluck" me, forced me to spite him and to learn by heart his formidable old-fashioned and unintelligible text-book. Two factors came to my aid. At that time I had a good memory, even for incomprehensible things; and, secondly, the examination took place in the presence of the whole faculty, who knew of the disturbed diplomatic relations between the professor and the student.

Another more illustrious man—a fellow student and a real friend—

* He wrote on anatomical and ophthalmological subjects, hernia, tenotomy, ligatures, and injuries of the skull.

whose name should not be forgotten in the history of Medicine, was Carl Otto Weber (1827-67). He passed his whole student life in Bonn, and was by far the most accomplished man in a wide circle,—a good anatomist, clinicist, botanist, mineralogist, and musician. He died very young, 1867, while Professor of Surgery in Heidelberg. There he succeeded Gustav Simon (1824-76), whose name should be familiar to all of us on account of his priority in extirpation of the kidney. Carl Otto Weber wrote authoritatively on diseases of the tissues, of the skin, connective tissue, blood and lymph vessels, nerves, the face, on enchondroma, epithelioma, and the diseases of the joints. He died a medical martyr. Performing tracheotomy on a croup child, he prevented suffocation by sucking out the trachea filled with blood and diphtheritic membrane. He saved the child, he destroyed himself, and with himself the hopes of the medical world.

Foremost among the good and great men whose friendship and assistance I enjoyed at that time and ever since, was Dr., now Sir Hermann Weber. He was Nasse's chief of clinic, and was entrusted with the principal hospital work and the out-door practice amongst the poor. Under his guidance I had a good deal of practical work. At another occasion I have reported the case of an old man of 78 years whom I had thus to treat in 1850, for his bilateral pneumonia. At that time the internal treatment of pneumonia consisted mainly in the administration of large doses of tartar emetic. Venesections were still made frequently; after a while they were unduly neglected and abandoned, so that nowadays you sometimes find a practitioner who does not know how to perform one without the fear of cutting into the brachial artery. So I made two venesections, attended him all the way through, and still he got entirely well. The case may teach you two things: 1st, that even a seriously ill man of 78 need not be despaired of; 2nd, that you are, however, under no obligation to make serious mistakes, fashionable or not. Dr. Weber emigrated to London in 1851. He advised me of that step in the last letter I received from anybody for several years during which the Prussians were taking me for a political star of dangerous magnitude, and dragged me from one of their dungeons to another. After years I met him in London as a house physician in a hospital. Then he embarked in a successful consultation practice, became a much respected and admired authority on subjects connected with climatology, mineral springs, and tuberculosis, was knighted, and practices successfully what he preaches. His address, published two years ago, on the means for the prolongation of life contains the teaching which has made him a joyful and youthful gentleman at present of eighty-two years. He is the only medical friend of those distant years

still left to me. If he will promise to continue the genial youthfulness of his heart and brain, I hope he will survive me for a generation. If, however, he would insist upon it, I should not object to keeping him company.

I hope, gentlemen, that many of you, as he did, will go into general practice. It is true there is more reputation in narrowing one's self down in a specialty, but remember for a few only; more money for some; a narrow horizon nearly amounting to actual blindness for almost all. If there be any here preparing to embark in a specialty immediately after graduating, I sympathize with them, for they condemn themselves to carry blinders all their lives, and to lead the lives of medical hermits. Whoever expects to be great in a specialty should arrive at its portals through the gates of general practice. Whoever without ample and wide clinical experience limits his field of vision to the nasal, or rectal, or laryngeal cavity, acquires and deserves all the darkness of the gloomy regions of his choice, and whoever is one of those who like to misunderstand, and to censure Jacobi for hating specialties and disapproving of specialists, are merely enjoying their misapprehension.

I am certain I shall not be misunderstood here. No science or art can improve without specialistic work. Great investigators must concentrate their efforts to find new facts for us; many of them have become benefactors only by becoming unselfish martyrs. What I object to is the flippancy of young practitioners which tempts them to look upon the human organism as a mechanism whose parts they may separate and treat like the wheel in an engine. On the other hand, I admit that our personal attitude to the question of practical specialism may become just a trifle strained and look overdone. I will give you my personal experience:

Fifty years ago it was my greatest ambition, and the aim worked out for myself and dimly seen in my mind's eye, to live long enough to develop the study and the teaching of physiology and the diseases of infancy and childhood to such an extent as to be mentioned among the pediatrists of America, or perhaps even of the world. I knew my Seneca and remembered "Patet omnibus veritas, nondum est occupata—truth is open to all, it is not occupied." In a long life views and aims may change, however, or at least be modified. I have become more sensitive, I believe, certainly I do not like to be called names, least of all "specialist." When I got out of my intellectual teens, that is, when I grew up to be fifty or sixty, or seventy-five for that matter, I lost my taste, if ever I had it, for being labelled with a trade mark, like the German Kinderarzt, or Frauenarzt, or Nervenarzt, or what not, displayed on their shingles. A hundred times strangers would call

at my office and ask: We understand you are a children's specialist, and I would say: Specialist? No such thing. If I am not good enough as a doctor, go somewhere else. And somewhere else they would go—sometimes to my own college clinic.

A specimen of what has often been called a specialist was Carl Gerhardt (1833-1902), since 1871, when I met him first, my friend until he died three years ago. He published, in and after 1861, several editions of a wonderfully learned, at the same time practical and concise text-book on the diseases of children. He was the editor of the great manual of diseases of children which appeared in 7 volumes, 1877, and during a course of nearly twenty years, and placed pediatrics in Germany on a sound foooting. Thus he was the predecessor of Keating in America and Grancher and Comby in France. If anybody could be called a specialist in the diseases of children, his was the claim. But he was the general clinician in Jena, in Würzburg, where he succeeded Bamberger, and in Berlin in the chair vacated by the death of Frerichs. He wrote on the location of the diaphragm, the diseases of the pleura, and of the larynx, on croup, and many other subjects. One of the best books on auscultation and percussion in any language is his. He was, perhaps, the most expert laryngologist of Germany, and was the first to diagnosticate, while an extermination was still possible, the cancer in the larynx of the unfortunate Crown Prince of Germany. He was a perfect chemist; the iron chloride test of glycosuria is named for him, not by him—for he had the righteous simplicity characteristic of a really great man—and was none of the strenuous gasometers replete with pompousness, promises, and inconsistencies, whom we cannot avoid meeting in society or in politics. He was a physician looking for the ends of medicine, which is the cure and prevention of disease. The recommendation of sodium borate for adiposity—gentler and less dangerous than the much abused thyroid preparations—is among his last publications. Facing the preface of my Therapeutics of Infancy and Childhood there is this dictum of Gerhardt's: "Healing is a fruit that grows on the tree of knowledge. No rational therapy without diagnosis. First examine, then judge, then treat." He was the ideal scientific physician and teacher. It is true, gentlemen, there is, perhaps, nobody here who will ever be a Gerhardt, but there is no one who should be without the highest ideal. Ideals are not for those only whose heads tower above ours, and the very soles of whose feet seem to walk over the clouds, but for all of us who take pride in admiring great examples and trying to follow them.

The same year (1902) which deprived the world and me of Gerhardt, removed three other great physicians. Adolf Kussmaul, I never met personally; Hugo von Ziemssen I knew when a student in Greifswald

and met from time to time in later life. Perhaps he is most widely known by his editorship of a great cyclopædia, viz., that which preceded those of Eulenburg and of Nothnagel (Thompson Holmes, 20th edition). A still more important achievement of his is the powerful aid he gave to the regeneration of the Munich University and its change from what was a clergy-ridden and mediæval prison of the intellect, into a modern school of thought, and of science and art. So if Gerhardt was the benefactor of clinical medicine in all its special branches, entitled by his accomplishments to the place of a specialist in each, Ziemssen, while being a great teacher and original writer, added to these merits of his the delivery of a great institution from the fetters of ultramontanism.

The greatest, however, of all the gigantic intellects, and at the same time a humanitarian of a world-wide horizon, was Rudolf Virchow. We all have lost in him a friend, for he was a friend and benefactor of mankind. His is a new era, that era created mainly by him. You know about his hundreds of epoch-making writings, about his tumours, his cellular pathology, and his Archives, which has reached its one hundred and eightieth volume. In the history of our profession, aye, in that of mankind, there is no man in whom a vast intellect was blended with a warm heart to the same degree. There never was so great a statesman in our ranks. At the age of twenty-eight years the Prussian Government sent him to upper Silesia to study the petechial typhus which was devastating the country. In his report he pictured the nosology and pathological anatomy as it had never been done before, but also its etiology, viz.,—the governmental neglect of the inhabitants which extended over centuries; their poverty, ignorance, filth, the moral and intellectual tyranny of the Catholic hierarchy, the economic subjugation both of the Prussian bureaucracy and of the effete feudalism. He urged medication and sanitation, but more eagerly social reforms, culture, liberty and comfort, unlimited democracy, education in public schools, agricultural institutions, care and education of the numerous orphans, building of roads, and the general recognition of the fact that, as he expressed himself, "our century is the beginning of a new social era." What happened? Was he applauded? decorated? rewarded? In accordance with Prussian methods, he was deprived of most of his public positions! Then in the first number of a new journal he said: "The physicians are the natural attorneys of the poor, and the social problems should largely be solved by them;" and in the last: "The medical reform we contemplated was to be a reform of science and of society." With this early programme he filled his rich life. Whatever concerned men, present and past, that he studied and revealed,—the sick, the dead, man both historical and prehistorical, man as a social

animal, in the municipium, in the state, on the globe. Modern anthropology has no more fertile contributor and founder; archæology was greatly benefited by his studies and travels. The contemporaneous human bee-hives of the whole world roused his warmest interest. He addressed hundreds of popular meetings, edited a thousand popular essays, looked after the sanitation of schools and civic and military hospitals, made Berlin a healthy city, and in parliament aided the liberal movement in Germany. There never was a man who more than he deserved the hatred of a few scoffers,—amongst them of the coarse, brow-beating Bismarck,—and the admiration and gratitude of his native land and all mankind.

This greatest of all pathologists, archæologists, anthropologists, was a statesman in this also—that he recognized and proclaimed the aims of medicine to be scientific healing. It may not be generally known that for a long time he directed a ward in the Charité hôpital. His handbook on pathology and therapeutics, written by himself and a small number of select men, 1854-1862, contains in its volumes everything that was known half a century ago, and much more than was new, and much that will stand for all times. He was the biological seer, knowing all and predicting more. His like we shall not see again, perhaps need not see again, because men endowed with high talents will do enough when building on the foundations. If there be anything I am proudest of in my comparatively humble life it is the honour of his friendship which I enjoyed these last twenty years.

Amongst those whose personal acquaintance I enjoyed, was Billroth, the great and original surgeon, at the same time an educator of high rank, and a popular member and leader of musical and classical society. Amongst my reminiscences, I treasure the following: In one of the instructive reports of his clinic, a third of a century ago—it was that of Zurich, long before he was called to Vienna—he spoke of tracheotomy in children as being to him the most formidable of all operations. He was terrified by the struggles of the child that suffered not only from the strangling croup, but from its fears and pain, and anguish and agony. Evidently he never used chloroform in this operation. Indeed, some authors were of the opinion, resulting from nothing but lack of experience, that anæsthetics increased the orthopnœa and anguish. I wrote to him about my own experience with chloroform, and that I feared the final termination but not the operation. A few years after I met him at a Congress. He laughingly said: "Thank you so much, I am no longer afraid." I replied: "That is what people say of you anyhow." A good handshake was my reward.

I shall still mention Nothnagel, who died lately, much younger than

I, and a warm friend—one of the born knights. His position in the world of medical letters you are intimate with. What you may not know is that all the reactionaries, all the obscurantists, and the whole rabble of antisemitic millions in the Austrian monarchy honoured him with their hatred, and spiteful persecution. As there was sunlight in his head, so there was warmth in his heart; that glowed for all that were down, all that were oppressed, rich and poor, without regard to colour, race, or previous conditions of servitude.

Gentlemen, I have kept you long, but I like to talk to the young. If, however, you are of the opinion of Cicero, who said that old age makes loquacious, "senectus loquax" please remember that I had to wait seventy-five years before I had this opportunity. Therefore you can afford to give me another minute for a few aphoristic conclusions that may be drawn from my kaleidoscopic review of past times. You have seen that great times make men, but men contribute to making history. That of medicine extends over thousands of years, but never attained actual scientific progress until it was studied as part of biology and founded on facts either clinically observed or based on experimentation. From our time on the teaching of Hippocrates will always be correct: "Whoever looks for a new road or believes he has found a new scheme is either a deceiver or deceived."

The few men I have presented to you in brief sketches, dear to me for more reasons than one, should be so to you because they moulded part of our common records. Their labours, their very existence, meant an active advance for medicine. They deserve our gratitude, and they teach us modesty, for there may not be many amongst us whose achievements will reach theirs. You will have noticed that much valuable work has been done long, long ago. If you will study history you will acquire a proper regard for our ancestors. If their writings were properly scrutinized and remembered there would be no such deluge of ephemeral rediscoveries of facts that your fathers knew or even learned from a previous generation. By examining the past you will save yourself much repetition and labour, and will improve your opportunities for real original work. For what the dead, or we the old, could not accomplish is a debt than you and your contemporaries should be anxious to pay. If you get into the habit of earnest scientific work you will never be older than the questionable forty or sixty, and there is at no time a metaphorical chloroform for you. But remember three thousand years' old Hesiod: "The immortal gods planted sweat before virtue: the path leading to the heights is long and steep." Also remember our good and great, and genial Wiliam Osler's master-word, which is: Work.

Most of the men of whom I have spoken to you were more than medical men only. The mere tradesman in the profession is a "med-

ical man"; the gentleman in the profession is more, he becomes a physician—but he only. In the lowliest practice there is many a case that no medicine will cure, but the medicus. You may be ever so learned, and yet an inefficient doctor. We doctors of the United States and the Government of the United States knew everything about typhoid and dysentery and their prevention, but Chickamauga and Montauk killed ever so many hundreds of young fellow creatures and made thousands of life-long invalids. Before the so-called Spanish-American war to each 2 men killed or mortally wounded in battle 10 would die of disease, and according to Dr. Louis L. Seaman in the Japanese army 1; in that of the United States 28. So-called civilized government can be as ruthless and savage as nature herself in her cruellest moods. That will always be so until the physician is accorded the controlling place in society demanded for him by the sages of all ages—Socrates, Kant, and Gladstone. Yours is the duty to work for that blissful future. While being citizens in the profession, be citizens in the community, in the state. You should be pathologists and therapists to the individual patient, you should, like Oppolzer, be the practical humanitarians. Still therapy, you understand, is not drug therapy only; but prevention and sanitation, and diet. But do not forget that the misanthropic disbelief in drug medication is the result of only ignorance or indolence. I never knew a surgeon to disbelieve in his knife when he knew its virtues and applications. I never knew a drug to do harm when not misused, or accomplish aught but good when its property was understood and the indication for its administration correct. The knowledge of your case and your drug, and the sympathy with the sick, will give you courage and patience; it is ignorance or callousness only that causes cowardice or negligence. Read your Hippocrates, my young friends. He tells us that "the art of medicine leads to piety towards the gods, and to love of man. Where love of your art is," he says, "there is love of mankind." Combine science and art and humanitarianism in private and public life. If you do so, you will be the good and blessed, and great physician and citizen. We may not be counted among the immortals, neither you nor I, but the good we do is not mortal, for there's no force but is preserved, and no active life is spent in vain. You are young, and young your ideals. The best men whose pictures I have showed you preserved their young ideals to their dying hours. Thus their lives exhibit examples of singleness, harmony and power. They were apostles of medicine who transmitted their gospel to their successors. All their great heritage is ours, is yours. In the science and art of medicine much is given us; and from us, from you, much will be demanded.

RECENT VIEWS ON THE THERAPEUTIC VALUE OF ALCOHOL.

BY

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On a subject about which so much has been written during the past few years, an apology is due the Association for speaking at all, especially as I must frankly at the outset admit that I have no new or original work to place before it, but, as the position of alcohol in therapeutics has been of late so seriously questioned, a critical *resumé* of the more recent views concerning its action may not prove altogether uninteresting.

The indictment which is now brought against the use of alcohol in medicine may be stated as follows: It does not stimulate the heart nor raise blood pressure. On the nervous system it is not a stimulant but a depressant and narcotic. It has no value as an antipyretic; it lessens the natural protective powers of the organism against infection and thus increases the tendency to bacterial invasion. It has no real food value. Its continued employment gives rise to a disturbance of metabolism, favouring the retention of waste products in the system. Briefly, it is asserted that alcohol fulfils no important indications in the treatment of disease; that its employment favours degenerative changes in the tissues, and there are weighty social reasons why the profession should no longer countenance its use.

The use of alsohol as a remedial agent comes down to us from very hoary antiquity, and has in the past been recognized as of considerable value by a long array of the most careful clinical observers that our profession has produced. Most of us have from the very beginning of our medical career been taught to regard alcohol as a rapidly diffusible stimulant, affecting both heart and nervous centres, easily appropriated by the organism and leaving on the whole few injurious after effects. An indictment like the above strikes at the foundation of our therapeutic faith, and calls for careful investigation.

At the outset let me say, as a pharmacologist, that on no other drug in the pharmacopeia has such an enormous amount of patient, careful work been expended as has during the past twenty years been given to the elucidation of the above questions, and, although on some points knowledge is still defective, pharmacologists of the present day feel able to speak on the main question with confidence.

Taking up the several points seriatim, let us enquire first into the action of alcohol *on the heart and circulation.* Careful experimental

Read at the Meeting of the Canadian Medical Association.

work on animals done in Germany, England, and America proves, I think incontestably, that alcohol in moderate doses does not perceptibly increase the efficiency of the heart action. There is sometimes a slight initial acceleration due to reflex action from the stomach. There is also a slight and transitory action on the heart muscle as on all the muscles of the body; this however, passes off quickly—about 30 minutes, and is followed by a depressant action which more than outweighs the temporary stimulation. On the blood vessels alcohol produces a dilatation of the superficial arteries with some evidence of a constriction of the vessels in the interior of the body; recent investigations refer this constriction to the area supplied by the splanchnic nerves. Blood pressure is not raised. A large and toxic dose acts as a direct depressant to the heart muscle and to the arterial system, and produces a notable fall in blood pressure. Numerous observations on healthy men have shown that alcohol in ordinary doses produces no appreciable change in the pulse rate or in the blood pressure of subjects when placed in bed or in some unchanging environment. To the finger the pulse may feel fuller, but the sphygmograph shows tracings of a similar type to those seen in aortic regurgitation. The results so uniformly obtained in the laboratory have been completely corroborated by observations at the bedside. Cabot, in the wards of the Massachusetts General Hospital, took more than a thousand observations on the blood pressure, temperature, pulse and respiration of patients, chiefly typhoids, before, during, and after the administration of alcohol in varying therapeutic doses, and found that neither the maximum nor the minimum blood pressure showed any variation that could reasonably be referred to the action of the alcohol; neither was the temperature, pulse rate, or respiration affected by it as judged by an additional series of observations on 309 other patients suffering from a variety of diseases. Dr. Cabot's conclusion was that so far as could be measured by the instruments at our disposal at present, the action of alcohol upon the circulation was nil.

Dr. Crile, of Cleveland, also as the result of most carefully conducted experiments, concluded that alcohol had no effect on the circulation so far as can be judged by an estimation of the pulse and blood pressure, either of normal animals or those in a state of shock. In cases in which a similar investigation was carried out in the wards of the Montreal General Hospital by my Assistant, Dr. R. J. Patterson, similar results were obtained. I think, therefore, that the conclusion is inevitable that the action of alcohol upon the heart is too slight and indefinite to be depended upon in therapeutics.

The effect of alcohol on the respiratory system may be summed up in a similar way; in moderate doses it has little therapeutic value as a respiratory stimulant.

The action of alcohol on the nervous system is a more complex one, and on men its apparent effects often vary considerably in different individuals. The first effect is generally one of apparent stimulation, with indications of increased mental and motor activity. This effect, physiologists affirm, is not due to the direct action of alcohol on the centres controlling this activity but to a depressing action on the higher inhibitory centres. Cushny illustrates the character of this action as follows: A person observing a sudden increase in the speed of an engine, may attribute the increase to more steam on the piston; it may, however, only be due to the removal of the brakes. It is noteworthy that this apparent stimulation is rarely seen in the sick, but becomes very noticeable when the action of alcohol is associated with the stimulation arising from good company, brilliant lights, and stimulating viands. *The true effect of alcohol is a depressing one,* manifesting itself first on the highest and last acquired centres of judgment discrimination and self-control; these are paralyzed, with the result that the centres of thought and motion which, under ordinary circumstances would be inhibited and retarded by these higher faculties, act now with increased freedom. In the result the increased blood supply to the brain arising from dilatation of the cerebral arteries may take some part.

Furthermore, the studies of Kraepelin and many others who have since corroborated his work, indicate clearly that alcohol does not increase either the mental functions, or the activity of the motor centres centres of the brain, or of the centres for associated action in the cord. On the contrary, it distinctly lessens their capacity for work, even when the doses are small, while with full doses the benumbing effect becomes very prominent.

This action of alcohol, however, is not in conflict with its clinical use. If alcohol were a true cerebral stimulant, how seldom could we employ it to advantage in medicine, especially in acute disease in which our great object is to secure rest for irritated nerve centres. The great objection against the use of caffeine in therapeutics is its stimulating action on the cerebrum, inducing wakefulness and mental and motor activity. In contrast to such an action physicians in practice find the benumbing narcotic influence of alcohol on the mental, motor and sensory centres can frequently be employed with considerable advantage.

The effect of alcohol on the power of the organism to resist bacterial invasion is a subject on which much experimental work has been done. Binz, in his lectures published in 1885 writes: "The opinion of our clinical teachers may in general terms be expressed as follows: Alcohol

in large doses increases in the organism in an extraordinary manner the power of resistance to septic poison. This view he corroborated by an experiment carried out on two dogs; but, as the experiment was never repeated, much value cannot be placed upon it. Shortly afterwards, Thomas experimented with rabbits, giving some of them for several consecutive days 5 cc. of alcohol per kilo. of body weight, and then injected them with several forms of septic material. He found that animals which had received no alcohol withstood a much larger dose of infection than those who had received alcohol previously.

Laitenen made a long series of similar experiments, using 342 animals of different kinds. Abbott in this country also carried out a similar investigation. Both arrived at the same conclusion as Thomas. The objection which was urged against these experiments was the large and almost poisonous doses in which the alcohol was employed, 5 cc. per kilogram of weight being the equivalent in a man of ordinary size of 13 oz. of pure alcohol. More recently new series of experiments have been undertaken, using alcohol in considerably smaller amounts. The results obtained from these indicate that while alcohol in small doses did not influence the course and severity of infection, in large doses it reduced the hæmolytic complement in the blood of those to whom it had been administered, thus lessening the resisting power of the organism. It also brought about a reduction in the number of free specific receptors in the blood of a rabbit artificially immunized against alien blood, thus lessening the immunity. In other instances alcohol in full doses reduced the temperature, but increased the duration and the severity of the intoxication. It may be urged against these investigations that even the small doses of some of the investigators would be considered large by clinicians of the present day; and that (in the experiments) instead of giving the alcohol as we do clinically in small and repeated doses, the total daily dose was administered in one or two potions; it is also contended that the result of studies on animals cannot be used as evidence of its action on sick men. Such considerations may influence our judgment to some extent, but view the experiments as we may, to my mind they speak very emphatically against the lavish use of spirits in every form of bacterial invasion. They also, I think, make it probable that the results obtained by many excellent physicians who have in the past treated successfully cases of septic and other infection using large and sometimes heroic doses of alcohol have been due more to their treatment in other ways than to the large doses of alcohol employed.

Of the value of alcohol as a food, I think we can speak at the present fairly positively. The recent experiments of Atwater in this

country, and Rosemann in Germany, with which you are doubtless familiar, have been lately corroborated in an excellent piece of research work carried out by Goddard in England. I shall not take the time of this assembly with the details of his experiments, which have recently been published, but only deal with his conclusions. When alcohol is given to the amount of 1-750 part of the body weight to fasting dogs, 95 per cent. of it is burnt up in the system, the balance passing off chiefly in the respired air and through the kidneys. If the law of the conservation of energy obtains in the living organism as we have every reason to believe that it does, the potential energy of alcohol must be transformed into kinetic energy in the body, and if the conditions which are true of the dog can be applied to human beings, an average man of 160 lbs., if fasting can burn up in his tissues about 3 ozs. of alcohol or 6 ozs. strong whisky in 5 or 6 hours, representing a food value equivalent to about 5½ ozs. of pure sugar or starch. It is therefore a fair inference that to this extent at least alcohol can be utilized in the body as a source of energy in conditions when other food can with difficulty be taken, digested, or absorbed. In thus acting as a food alcohol conserves proteid metabolism. Not only has alcohol this definite food value, but it has properties which, to my mind, enhance its value in conditions of exhaustion. It is a food that requires no digestion; but is promptly absorbed from the stomach, very little of it reaching the small intestines. Still further it promotes increased secretion from the gastric follicles, thus favouring the digestion of other foods; a fact which may be of inestimable value in those conditions of diminished or altered secretion associated with pyrexia and profound exhaustion.

It must be borne in mind however, that the effects of alcohol vary in different individuals, and that its action in the stomach is, to some extent, dependant upon variable conditions of the gastric mucous membrane and portal circulation.

With these facts before us, permit me very briefly to summarize what I consider to be the present position of alcohol in therapeutics. 1. Alcohol is not an efficient cardiac or respiratory stimulant, but when administered in frequently repeated small doses its action on the circulation may be regarded as favourable. In some conditions with a determination of blood to the interior of the body as indicated by cold extremities, livid skin, small pulse, scanty urine and high rectal temperature, a condition which has been described as bleeding into the splanchnic area, the administration of alcohol by dilating the superficial vessels and equalizing the circulation may be of considerable service. Alcohol may also be of value when given to counteract the

contraction of the peripheral vessels in the chill or rigor often associated with the onset of disease.

2. Alcohol is not a stimulant to the nervous system. Its action is that of a narcotic, benumbing sensation including that of fatigue, allaying subjective symptoms, relieving nervous strain and promoting rest. No other narcotic can be used so freely with so few injurious by-effects.

3. Alcohol in disease is a valuable food replacing carbohydrates, and, as a general rule, saving proteid metabolism. It places no tax on the digestive organs; on the contrary, if used intelligently, it increases their secretion, thus in low and asthenic conditions assisting the digestion and favouring the absorption of other foods. In such conditions it may also have a favourable action on the hepatic cells, stimulating them to increased activity.

In infections of all forms alcohol should be used cautiously. In such cases it may be of value to the system either as a food itself or as favouring the digestion and absorption of other fooods, but in large amounts it may and probably will do harm by destroying the resisting powers of the organism.

As clinicians we have to recognize that the effect of alcohol varies much with the individual and that its employment demands much discrimination and careful and frequent observation. We should also bear in mind that its prolonged use is liable to lead to degenerative changes in the heart, blood vessels, and secretory organs.

ON THE RADICAL MASTOID OPERATION AND THE INDICATIONS FOR ITS EMPLOYMENT.

BY

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Every practitioner of medicine is aware of the numerous grave consequences which may follow chronic suppurative otitis media; but he rarely realizes the insidious nature of this condition. There exists, in fact, a strange apathy in the profession in regard to suppuration in the middle ear. Practitioners who would take instant steps to arrest suppurative processes in what might be termed "safe" areas of the body will yet allow a discharge to continue indefinitely from the middle ear, a space bounded at every point by structures of a vital character.

This apathy is doubtless attributable to the peculiarly grave dangers attending operations in and about the ear; but, while pardonable to

a certain extent in the past, it finds no justification at the present time. Thanks especially to German workers, we have now at hand operative procedures for the complete eradication of suppurative processes in the temporal bone, which take rank among the most brilliant achievements of modern surgery.

But all cases of chronic suppurative otitis media are not equally dangerous; and all cases of discharge from the middle ear by no means call for operative interference. The object of this paper is to describe some modern surgical measures for the relief of chronic suppurative otitis media and certain of its complications within the temporal bone; and to sketch briefly the indications for their employment. A brief consideration of the local, anatomical and pathological changes will help us in this endeavour.

The middle ear is divisible into a lower part, the "atrium," and an upper part, the "attic." The attic, which is defined by drawing an imaginary line inwards through the upper level of Shrapnell's membrane (see fig. 1 and text) to the inner wall of the inner ear, is in turn divided into an inner portion, which is called the inner attic, and an outer portion, which is called the outer attic. The inner attic stands in free communication with the middle ear proper; but the outer attic forms an almost completely closed cavity by itself. For above, this space is bounded by the tegmen tympani separating it from the dura mater and the temporo-sphenoidal lobe of the brain. Outwards is the bony projection which extends downwards from the external auditory canal to the membrana tympani. Inwards, the bodies of the hammer and the incus, and a delicate process of mucous membrane, which extends from these structures to the tegmen tympani and anterior and posterior walls of the middle ear, cut it off from the inner attic; while below, the axial band of Helmholz, that is, the anterior, posterior, and external ligaments of the malleus, forms a more or less impassable floor. The outer attic stands in communication behind with the mastoid antrum.

The floor of the outer attic forms the roof of Prussak's space, a tiny cavity bounded above as stated; outwards by Shrapnell's membrane; below by the short process of the malleus; and inwards by the neck of the hammer. Occasionally the external ligament of the hammer is inserted directly into Shrapnell's membrane instead of the margo tympanicus; and under these circumstances the outer attic communicates directly with Prussak's space.

The outer attic is the most dangerous area of the middle ear. Suppurations in the tympanum proper or atrium and the inner attic may

be comparatively harmless; drainage is dependent and commonly so free through perforations of the membrana tympani that tension and necrosis are not set up to any considerable extent. But the case is different with the outer attic. Here we have to do with a cavity at times entirely self-contained as a normal condition, and commonly completely shut off during the course of a chronic inflammation, when any existing interstices are occluded by swelling of the mucous membrane present within its cavity. Suppurations in this space, which may be primary, but are much more commonly secondary to or concomitant with inflammation of the atrium, and in a variety of ways.

First, one may have destruction of the floor of the attic and a discharge of pus into the external auditory canal through a perforation in Shrapnell's membrane. Commonly associated with this condition there may be caries of the bony plate forming the outer wall of the attic with more or less extensive exposure of the hammer and incus. (See fig. 4.) These outcomes are to be looked upon as favourable, because drainage occurs in a proper direction, and may be sufficient, if free, to bring about a subsidence of the discharge. But the inflammation may attack the soft cancellous tissue of the tegmen tympani; producing a local necrosis, a local pachy-meningitis and eventually a tempero-sphenoidal abscess. This is one of the most common results of suppuration in this region. The external attic stands in free communication with the mastoid antrum; and clinical and pathological experience has shown that with inflammation of the one cavity there almost always co-exists inflammation of the other. Therefore, as another result, one may have an inflammation of the mastoid antrum going on to disease of the mastoid cells, and the production of a mastoiditis: and, through further extension of this inflammation, involvement of the lateral sinus with the production of a peri-sinus abscess, phlebitis, thrombosis, and eventually septicæmia or pyæmia from the entrance of septic material into the general circulation. Or, perforation may take place through that portion of the internal surface of the temporal bone, which bounds the cerebellar fossa and a cerebellar abscess be produced.

Another process which must always be taken into account in treating cases of chronic suppurative otitis media is that known as cholesteatomatous formation. It frequently happens that the epidermal cells of the external auditory canal proliferate and extend through a perforation of the membrana tympani to the interior of the tympanum. This process is very probably in the first instance a reparative one on the part of Nature; but it frequently happens that the underlying tissues are not in a proper state to receive the proliferated epidermal cells.

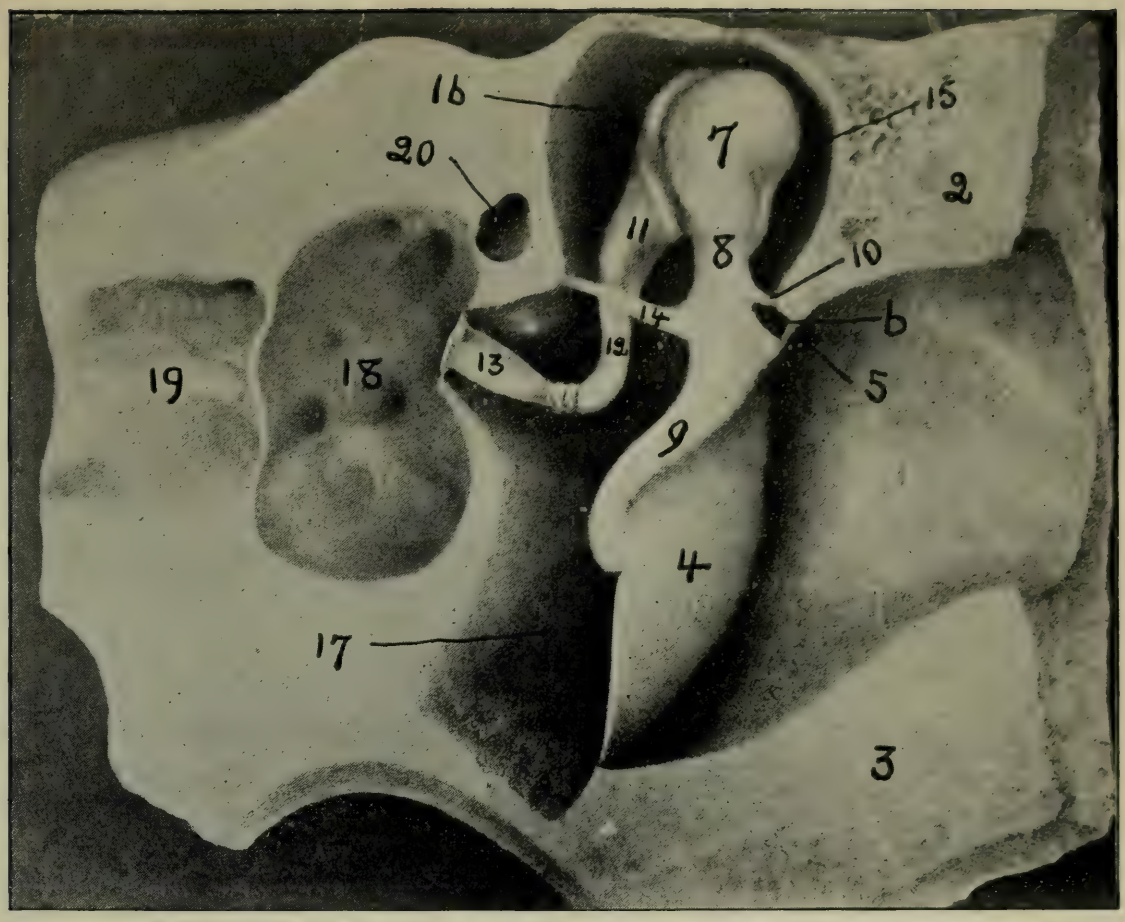

FIG. I. Section through the external, middle and internal ears. (Politzer.) 1, inner end of external auditory canal ; 2, section through superior wall of external auditory canal ; 3, ditto through inferior wall ; 4, membrana vibrans or membrana tympani proper ; 5, membrana flaccida or Shrapnell's membrane ; 6, Prussak's space ; 7, 8, 9, head, neck, and long process of malleus ; 10, external ligament of malleus and margo tympanicus ; 11 and 12, body and long process of incus ; 13, stapes ; 14, tensor tympani muscle ; 15, outer attic : 16. inner attic ; 17, atrium ; 18, vestibule with openings of semicircular canals ; 19, cochlea ; 20, facial canal.

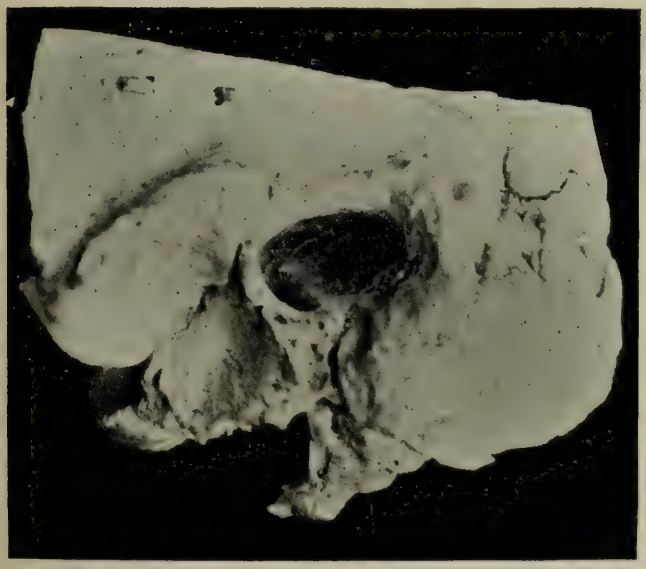

FIG. II. Temporal bone showing the dissection in cases of chronic suppurative otitis media. Only the cells over the mastoid antrum have been removed.

FIG. III. Temporal bone showing the dissection sometimes necessary in cases of chronic suppurative otitis media, complicated by mastoiditis. Practically all the mastoid cells have been removed.

and, as a result they undergo degeneration. In this way is produced a mass of dead material favourable to the growth of organisms, and liable still further to stimulate necrotic changes.

Now, if drainage be imperfect and cannot be satisfactorily established, it is easy to understand how serious a matter it is to allow an inflammation to continue for any length of time in this highly dangerous area. To prevent the most disastrous results the attic and the adjacent mastoid antrum must be freely laid open; and, in fact, every particle of diseased tissue in this region must be taken away to secure perfect immunity from danger. The object of the newer operative methods is to open up, clean, and heal these spaces when it is impossible to thoroughly drain them by the ordinary methods. A description of the so-called radical operation of Zaufal will illustrate what modern otology is accomplishing in this field.

Zaufal's Operation.

An incision is made immediately behind the auricle and is carried from its upper insertion to the tip of the mastoid process. The skin and periosteum are pushed freely aside, and the surface of the mastoid process is laid bare. The surface-marks are the same as for the ordinary operation; the mastoid antrum is held to lie beneath an area which is bounded by lines drawn tangent to the superior and posterior walls of the auditory canal and that portion of the circumference of the external auditory canal which is included between those lines. Chiselling is begun in the ordinary way, but the dissection includes as well the upper part of the posterior bony wall of the external auditory canal. One does not at first go higher than the linea temporalis, nor further back than 15 mm. from the external auditory canal, in order to avoid wounding the dura mater and lateral sinus respectively. The chiselling is also done at first from above downwards and from before backwards for the same reason. At a depth usually of about 15 mm. the mastoid antrum is opened; and after carefully wiping away all pus and granulation tissue one generally sees a slightly-raised, whitish eminence standing out against the surrounding congested back-ground. This is the horizontal semicircular canal, and its immediate recognition is of the first importance. To wound the horizontal semicircular canal means to open up a channel for septic material to pass directly into the internal ear and intracranial cavity; or, at best to cause the patient weeks of extreme vertigo, nausea and lateral nystagmus. Besides this, it is an important landmark for the facial nerve, which lies immediately in front.

When the mastoid antrum is freely opened there remains a neck of bone which separates this structure from the external auditory canal, and is in direct continuation with the outer wall of the outer attic. This is next removed, great care being taken to avoid wounding the facial nerve, which descends immediately beneath it to the stylo-mastoid foramen. A careless or ignorant operator is very liable to produce facial paralysis at this juncture. The neck of bone and the outer wall of the attic dealt with, one next removes what remains of the incus, hammer and membrana tympani; and care is taken at this time as well as afterwards to carefully avoid injury of the stapes, as here again rupture of the structures filling the foramen ovale would produce a point of entrance to the internal ear and intracranial cavity. One

FIG. IV. "Dangerous" perforation indicative of disease of the outer attic. Shrapnell's membrane completely destroyed, and the head of the malleus exposed through caries of the outer wall of the attic. See Fig. I., 10.

FIG. V. "Dangerous" perforation of the posterior-superior quadrant of the membrana vibrans in association with a perforation of Shrapnell's membrane.

FIG. VI. Type of "non-dangerous" perforation in the posterior-superior quadrant of the membrana tympani.

has now a large, irregular cavity composed of the middle ear, the attic, the mastoid antrum and as many mastoid cells as were found diseased and removed. This space is thoroughly cleared of granulation tissue and inflammatory products and is enlarged at every point into sound bony tissue.

The last step consists in preparing flaps for the epidermization of the cavity above described. The knife is entered from behind forwards at the junction of the auricle with the membranous canal and is made to appear at the external meatus. The incision is then carried downwards and upwards, so that on again bending the auricle forwards one has a somewhat oval aperture in the posterior wall of the canal. Finally, another incision is made at right angles to the one described and throughout the whole length of the canal. In this way one pro-

duces a superior and inferior flap which are applied to the exposed bony cavity and held in position by means of gauze packed through the retro-auricular opening or through the external auditory meatus, the former having been closed from the outset by means of sutures.

The first dressing is done about the eighth day, and after this the wound requires daily attention until recovery is complete. Granulation tissue gradually arises and covers the whole of the exposed bony surface; and, following this, occurs a growth of epidermal tissue which in favourable cases forms a clean, dry lining at the end of eight or ten weeks.

The effect on the hearing of patients who show normal conditions in the nervous apparatus of the ear previous to operation has been found by Grossmann to be as follows: The hearing improves in 50 per cent. of the cases. This is due to the increased mobility of the stapes. It remains unchanged in 20 per cent. of the cases; and is made worse in about 30 per cent. On the whole, the outlook is rather favourable as regards hearing, especially if great care is taken not to interfere with the integrity of the stapes.

Stacke's Operation.

In those cases, where the inflammation is thought to be strictly confined to the attic and adjacent aditus and antrum, certain surgeons prefer to obtain drainage by means of Stacke's procedure. An incision is made behind the auricle; the skin and periosteum are pushed forward; the membranous portion of the external auditory canal is separated as deeply as possible from its attachments, pulled from the canal, and held at one side. In this way a clear view of the structures at the innermost part of the external auditory canal is obtained. What remains of the hammer and the membrana tympani is now removed, and the outer wall of the attic is taken away by means of special chisels, a protector being used to guard against injury to the facial nerve and other structures in the inner wall of the middle ear. The chiseling is continued backwards, if necessary, until the mastoid antrum and as many of the mastoid cells as are diseased are removed. Finally, the membranous portion of the canal is replaced, and is used for the purpose of lining the cavities so created in much the same manner as in the operation of Zaufal. The Stacke procedure has the disadvantage of a very small field of operation; but it has two very special indications for its adoption. The one is in those cases in which, as the result of sclerosing changes in the mastoid, the mastoid antrum is so small that it cannot be found through an ordinary opening without grave danger of wounding the facial nerve. The other indication presents itself when the lateral sinus lies so far forward that it is

impossible to enter the mastoid antrum through the mastoid process without injury to this structure. In both of these cases the danger can be avoided by removing the outer wall of the attic, and entering the mastoid antrum in this direction.

To-day, however, the majority of otologists prefer the Zaufal to the Stacke operation, once the necessity of a radical operation has been definitely decided upon, as the former procedure offers a wider field of operation and a greater certainty of removing all the cells which may be found diseased in the vicinity of the mastoid antrum.

Indications for the Operation.

In discussing the indications for the radical mastoid operation it must be admitted at the outset that some of our ideas touching this phase of the procedure are still in process of evolution. Unanimity of opinion prevails amongst aurists in regard to the necessity of the operation in several different diseased states in the temporal bone consequent upon suppurative otitis media; but the views of the authorities are more divergent when we come to the question of its application in suppurative otitis media as an isolated condition.

It is perfectly clear that in those cases where the attic has been already involved for some time, and cerebral conditions are threatening—as evidenced by pain, headache and vertigo—operative measures are imperatively and instantly demanded; and it is also clear that, once intra-cranial or sinus mischief has been set up by direct extension, nothing short of a radical operation will thoroughly clean up the local condition, and leave a free field for the work of the general surgeon. So too in those cases of chronic suppurative otitis media where the inflammation has extended from the attic to the antrum and mastoid cells the only procedure that can be successful is one which attempts not only to establish drainage as in the ordinary mastoid operation, but to remove as well all carious bone and inflammatory debris from the diseased temporal bone. And finally in those cases of acute mastoiditis which do not subside after the ordinary operation, but lapse into a chronic condition, it is advisable to thoroughly clean up the field by a radical operation.

Difficulty arises only when we come to the surgical treatment of chronic suppurative otitis media pure and simple. Some surgeons operate in every case, once a diagnosis of chronic suppurative otitis media has been established, and there is much to be said in favour of this attitude. But the majority of otologists are inclined to be more conservative; since it is perfectly true that the majority of cases of chronic discharge from the ear can be brought to a standstill by much

simpler methods. It is only in a certain few cases which resist treatment, or cannot be kept under close observation, that surgical intervention is indicated; and those are especially to be feared, in which the attic is more or less certainly involved. A perforation in Shrapnell's membrane, with or without caries of the outer wall of the attic, is positive proof of disease of this area; and we can be sure of disease of the attic and adjoining aditus and antrum when, with a perforation of the posterior-superior quadrant of the "dangerous" type, the pus is seen to come from behind and above on mopping away the secretion. Cases of this character, when accompanied by signs of advanced bony necrosis, call for radical and energetic measures in the absence of an immediate and marked improvement under the simpler methods commonly employed.

But in numerous other cases the question of the advisability of an operation is more difficult, and many factors have to be carefully considered before a proper judgment can be formed. In this endeavour, the character, size, and situation of the opening in the membrana tympani is helpful. Perforations of the drum membrane are classed as dangerous or non-dangerous, according, as they do, or do not touch upon the bony tissue. In fig VI. the type of a "non-dangerous" perforation, the opening is everywhere bounded by tympanic membrane. In figs IV and V,which represent "dangerous" perforations, a portion of the confines of the openings is formed by bony tissue. The inference is that in perforations of the dangerous type the inflammation has extended to the contiguous annulus tympanicus and set up there a necrotic process. With small perforations, and with perforations situated high up, the danger is obviously greater than with those of larger size, or with those situated lower down in the tympanic membrane. As a further aid to the detection of necrosing bone a delicate probe carefully handled gives valuable information; and accompanying necrosis the discharge has often a thin watery consistency, and a peculiarly foul odour which are characteristic to the aural surgeon.

The presence of cholesteatomatous material in the discharge, as indicated by characteristic whitish flakes, or caseating masses of a peculiar odour reveals another condition which always calls for serious consideration. The cholesteatomatous process has a very especial tendency to invade out-of-the-way cells which are difficult, or impossible, to reach by the ordinary channels. It tends directly by the pressure of its own growth, and indirectly by the stimulus it gives to the development of bacteria, to produce bony necrosis; and often it is insidious in its progress. While, therefore, there are exceptions to the rule, the un-

doubted presence of cholesteatomatous formation is another strong reason in favour of operative interference, and often of interference of a very extensive character, because of the widespread nature of the condition, and its well known tendency to recur unless every diseased cell is removed. Naturally, of course, the state of the patient's general health is another factor which can never be left out of consideration.

Eventually, however, the question comes to be in every case one of expediency. The surgeon must decide how long it is safe to allow any given ear to continue to discharge, and this can only be done by close observation of the case and a careful consideration of the factors enumerated above.

Finally, in brief, the indications for the radical mastoid operation may be summarized in part as follows: (1) Cases of chronic suppurative otitis media in which cerebral complications are threatening or have been already established; (2) Mastoiditis secondary to chronic suppurative otitis media; (3) Cholesteatomatous formation; (4) Cases of chronic suppurative otitis media not yielding to milder measures.

BALZAC, THE HERO OF "OVERWORK."

BY

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Men talk of the victims of wars and epidemics, but who considers the battlefields of arts, science, and letters, and the dead and dying that fierce struggles for success pile upon them?. Balzac.

Speaking as an expert craftsman, Henry James pronounces Balzac "the master of us all." "So far as we do move, we move round him; every road comes back to him." No other is comparable to him in the objectivation and vivification of his characters; they live by the inhering power of their own souls, which seem to have been given them by nature, not by the novelist. This creative instinct is the final seal of literary greatness, and by it one judges of its permanency. Balzac's characters, like those of Shakespere, have freedom, and their creator respects their liberty; "Balzac loves his Valerie," said Taine, and the truth is applicable to most of his characters. For quality and intensity therefore none approaches him. The wonder that a man could beget something like 2,000 such children of the spirit in less than 20 years is indeed a miracle which amazes those who have deepest studied Balzac's work. One is really dazed by the phenomenon when he overlooks the record of the amount of work done. His acknowledged writ-

ings begin in 1829, and end in 1849. In these 20 years his bibliography of separate and finished works gives the following number of titles:—

1829	3	1839	11
1830	71	1840	11
1831	77	1841	10
1832	44	1842	9
1833	13	1843	9
1834	8	1844	7
1835	8	1845	4
1836	12	1846	4
1837	7	1847	2
1838	6	1848	3
Total			319
Posthumous works			6
Correspondence			2
Inedited			2
Titles announced but never published			95
			424

I have added the last item to direct attention to the inexhaustible imaginative ability, the creative spirit outrunning the possibilities of execution, even in one with almost miraculous powers. Nor should we forget that before he was 21 he had written a tragedy, spending 15 months in a garret to perform the task, and thereby was "reduced in health and strength." Before 1829, he had written ten novels in 40 volumes, not one of which he ever allowed to appear under his name. In 1835, Balzac (always self-conscious and well aware of what he was doing, of its results to himself and the world) says of himself:—

> . . . . . think of those seventeen volumes manufactured by me without help; compute that that makes three hundred *feuilles* (4,800 octavo pages), each read more than ten times, and that makes 48,000, besides the conception and the writing.

Some essayist has made a calculation that during his years of literary labor he wrote in average over 600 words a day. Compare that with the half a dozen or more lines a day of Darwin, Parkman, Carlyle, and others.

At least partially equalizing the difference in research and imaginative work must go the fact indicated in the foregoing excerpt: Balzac had a magnificent conscientiousness in the quality of his writings. It is literally true that he compelled the printers and publishers to furnish as many revises as ten, sometimes at his own expense, so that often not a line of the original remained in the published pages. When one considers that all this time Balzac was deluged with his enormous and disgusting financial worries, his literary conscience must be writ large on the credit side of his account-book of heroism. In reply to an urgent publisher he wrote:—

I am ready to send you the copy on the 15th, but it will be the most infamous murder of a book that was ever committed. There is in me a feeling, I don't know what it is, which prevents me from consciously doing wrong. The question here is the future of the book,—am I to make it unworthy trash, or a work for the shelves of a library?

One is lost in wonder at the power of concentrated and persistent effort required to carry out the awful labor. For the greater part of these 20 years the man actually worked from 16 to 20 hours a day. A hundred quotations could be made in support of this; a few may suffice:—

I work now 22 hours daily. (1834).

Last week I took in all but 10 hours' sleep. (1834).

Père Goriot was done in 40 days, during which I did not sleep 80 hours. But I must triumph. (1835).

I am working 24 hours running. Then I sleep five hours, which gives me 21½ hours to work a day. (1835).

I don't know that brain, pen, and hand have ever done such a feat of triumph. (1835).

For 25 days I have only slept a few hours. (1837).

Such an abuse of the physiologic machine must finally produce disease; that it took Balzac 20 years to kill himself is only explainable by the fact that he had a physique of remarkably exceptional perfection. In the famous statue Rodin has brought this out with the insight of genius.* Nature and heredity had seemingly conspired to produce an organism superbly fitted to withstand the peculiar kind of abuse to which Balzac forced it. The brain, the magnificent organ that never failed to answer command, that never succumbed to disease no matter

* What then was this "Balzac" which was so much detested, and about which the most abusive and extraordinary things were written? Merely the image of the great writer, draped in a dressing-gown, with empty, hanging sleeves; he has risen in the night and is walking up and down, disturbed and sleepless, pusuing an idea that has suddenly presented itself. He is bent forward, his head thrown back, the eyes deep-set, and the mouth contracted in a smile of challenge. The powerful neck—the neck indeed of a bull—emerges from the open wrapper. Rodin made use of various daguerreotypes, and especially of a celebrated portrait of Balzac, that shows him in shirt-sleeves, with one brace, and folded arms. The enormous proportions of the head, the amazing strength of the thorax, the monstrous and leonine character of the face are all exact. "His was the countenance of an element," said Lamartine of Balzac, "with a torso that was joined at the head of an enormous neck, short legs and short arms." These words absolutely justify the statue. Rodin has made studies for it in the nude (there are some fine clay models of the subject in his study), then clothed it with a gown (or, to be more exact, with a bath-wrap, for that is what Balzac's famous monk's robe was), and proceeded to simplify the folds until he had left only the two or three essential ones. The result thus obtained with the dispropriation of body and legs, led Rodin to hide the short, ugly, useless arms under the drapery, and the figure thus assumed pretty much the appearance of a mummy, of a sort of monolith, from which nothing stood out but the one point of interest, the savage and magnifying animality of the head, with its darkened gaze and the bitterly curved mouth. (M. Mauclair. From *Current Literature*, August, 1905.)

what was commanded, was fed through a short and massive neck* by the heart and lungs of the "amazing thorax." Had there been any sort of pity of the organism by its tyrant, the digestive and eliminative organs below might have permitted Balzac to work 25 or 30 years longer, as did those of Gœthe, Humboldt, Gladstone, and others. Alas! There was the most absolute lack of pity, and at the last, despite his magnificent powers of regeneration, the eyes and kidneys had to cry out, "We cannot longer: you have demanded the impossible."

The history of the incapacities and rebellion of Balzac's body began with the beginnings of his reckless demands upon it. One of his biographers thus writes:—

"'When I was quite a young man,' Balzac writes, 'I had an illness from which persons do not recover; nineteen out of twenty die.' Dr. Nacquart said, 'If he gets well now he may live a hundred years.' . . . . . He frequently alludes to the fact that Dr. Nacquart saved his life. This illness, doubtless the heart disease which he mentions to George Sand in 1831, and to which his sister alludes as the result of a great mental shock. must have occurred during the first of these years of which there is no record."

This pompous nonsense however has its explication, and a natural one:—At the Vendome College, where he had been sent at seven years of age, he had not had a single holiday for seven entire years. At the end of this pedagogical barbarism "he was attacked with a sort of coma"; as he was accounted an idle boy his superiors could not understand it, and like the physicians of all later times, they rushed to "pathology" and "heredity" for reasons. It was a peculiar "affection of the brain." Honoré was thin and puny, he was in a state of semi-somnambulism, scarcely hearing, unable to reply to questions. In later years Balzac explained this and similar states as due to "a sort of congestion of ideas," — at least he did not fly to the theory of "disease of the cerebrum," "organic, or inherited." The rationale of its origin is plain when it finally comes out that the "idle" boy of 14 had composed "treatises on the will," and, unknown to the professors, had read "the greater part of the rich library of the College which had been formed by the learned Oratorian founders and proprietors of this vast institution!" Returned to his home by the perspicuous educators, the grandmother wisely remarked: "See how a college returns to us the blooming children we trust to it!" Health, love of life, and activity, soon returned to the boy at home.

From this time we have little trustworthy or suggestive history until

* My brother used to say, laughingly, in allusion to his want of height, that "great men were nearly always short; probably because the head should be near the heart, so that the two powers which govern the organization should work in harmony." (Honoré de Balzac, page 255.)

at the age of 34 the human machine begins to cry out against the outrages thrust upon it. The real nature of the hurts can be only guessed at in the following quotations from Balzac's letters:—

Yesterday I had an inflammation of the brain, in consequence of my too hard work; but, by the merest chance, I was with my mother, who had a phial of *balm tranquil*, and bathed my head with it. I suffered horribly for nine or ten hours. I am better to-day. The doctor wants me to travel for two months. (1834).

My cold is precisely the same. (1835).

I am a prey to the horrible spasmodic cough I had at Geneva, and which, since then, returns every year at the same time. Dr. Nacquart declares that I ought to pay attention to it, and that I got something which he does not define, in crossing the Jura. The good doctor is going to study my lungs. This year I suffer more than usual. (1836).

. . . . . speaking literally, I *am* killing myself.. Physical strength is beginning to fail me. (1836).

My forces are being exhausted in this struggle; it is lasting too long; it is wearing me out. (1836).

. . . . . A nervous sanguineous attack. I was at death's door for a whole day. (1836).

All the mucous membranes are violently inflamed; I cannot digest without horrible suffering. (1836).

I entered the garret where I am with the conviction that I should die exhausted with my work. I thought that I should bear it better than I do. It is now a month that I have risen at midnight and gone to bed at six; I have compelled myself to the least amount of food that will keep us alive, so as not to drive the fatigue of digestion to the brain. Well, not only do I feel weaknesses that I cannot describe, but so much life communicated to the brain has brought strange troubles. Sometimes I lose the sense of verticality, which is in the cerebellum. Even in bed my head seems to fall to right or left, and when I rise I am impelled by an enormous weight that is in my head. I understand how Pascal's absolute continuance and his immense labour led him to see an abyss around him, so that he could not do without two chairs, one on each side of him. (1836).

I have been ill the whole time. Finally I had what I seemed to have been in search of, an inflammation of the bowels, which is quieted to-day. I still suffer, but that is a small matter. I have had constant suffering, and I greatly feared an inflammation for my poor brain after so painful a year, painful in so many ways, hard in toil, and cruel in emotions, full of distresses. There was nothing surprising in such an illness. However, though I can, as yet, digest only milk, all is well and I resume my work. (1837).

Nearly the whole of my month of January was taken up by an attack of very intense cholerine, which deprived me of all energy and all faculties. Then, after getting over that semiridiculous illness, I was seized by the grippe, which kept me ten days in bed. (1837).

This illness has made me lose six irreparable weeks. (1837).

I ended by getting an inflammation of the lungs, and I came to Touraine by order of the doctor, who advised me not to work, but to amuse myself, and walk about. To amuse myself is impossible. Nothing but travel can counterbalance my work. As for working, that is impossible; even the writing of these few lines has given me an intolerable pain in the back between the shoulders; and, as for walking, that is still more impossible; for I cough so agedly that I fear to check the perspiration it causes by passing from warm to cool spots and breezy openings. I thought Touraine would do me good. But my illness has increased. The whole left lung is involved, and I return to Paris to submit to a fresh examination. But as I must, no matter what state I am in, resume my work and leave a mild

and milky regimen for that of stimulants, I feel that toil will carry me off. (1837).

I hasten to tell you that the inflammation, which turned into bronchitis, is now cured. (1837).

I am a little better, that is all. I have been ill of a malady that love abhors, caused by the quality of the drinking water, which contained calcareous deposits. Hence, complete dissolution of my brain forces. (1838).

I left my bed to-day for the first time in ten days. My illness, which is nearly over, was an attack of cerebral neuralgia, caused by a draught in a railway-carriage, which, combined with the mental condition in which I was, gave me a horrible fever, which I had, and the atrocious sufferings of neuralgia. (1840).

It is now twenty days that I have suffered much with a species of cholerine, or inflammation of the bowels, ... (1840).

I am very lonely when my brain ceases to work, or lies down to rest. There is something humiliating in the thought that a trifling inflammation of insignificant viscera prevents the exercise of our highest powers. (1840).

I have had a species of congestion of the head. (1841).

If the colic, as Lord Byron says, puts love to flight it certainly knocks down imagination; not only have I suffered, but my brain has been as if veiled. Last night was dreadful, and the waking not pleasant. (1844).

When I do not suffer in my head I suffer in the intestines, and I have at all times a little fever; nevertheless, this morning, at the moment of writing to you, I am well, or, rather, I feel better. (1844).

I have a severe lumbago and fever; I feel all kneaded and broken. I went beyond my strength. (1845).

I should have been dressed differently and so escaped my cold. (1846).

Till now, I have not felt the baneful effects of the Asiatic climate. It is fearful. I have headaches all the time. Heat and cold are both excessive. Asia sends us winds charged with elements quite other than those of European atmospheres. (1849).

I took a cold at Kiev, which has made me suffer long and cruelly. The treatment I have been undergoing for my heart and lung trouble are uninterrupted, for I had no strength for it. I have reached the stage of absolute muscular weakness in those two organs, which causes suffocation for no cause at all,—a slight noise, a word spoken loudly. However, this last cold is getting better, and they are going to try and remedy the muscular exhaustion; otherwise, the journey home would be very difficult. I have had to get a valet,—being unable to lift a package, or make any movement at all violent. (1849).

I have had what the doctor calls an intermittent cephalalgic fever. It was horrible. It lasted thirty-four days. I am as thin as I was in 1819; . . . . . (1849).

I took the most deadful cold I have had in my life. (1850).

"Simple hypertrophy." (1850).

Profound albuminuria. (1850).

The principal definite illnesses or symptoms thus indicated are therefore seen to be:—

1. "Inflammation of the brain." *
2. "Horrible spasmodic cough."
3. Failing physical strength; lassitude; exhaustion.
4. "Nervous sanguineous attack."
5. Loss of sense of verticality (dizziness); the head heavy, etc.
6. "Inflammation of the bowels."
7. "Inflammation of the lungs," "the left lung involved," turning out to be "bronchitis."

* In almost every biography or series of letters one will find suggestive allusions to the sufferings of others. In 1844 Balzac wrote:—

Frederick Lemaitre was in fear of a cerebral congestion; I found him yesterday at midday in bed; he had just plunged into a mustard bath up to his knees. Twice the night before he lost his eyesight.

8. "Inflammation of the blood."
9. "Coagulation of the blood."
10. "Cerebral neuralgia," "horrible fever," "atrocious neuralgia."
11. "Intense cholerine."
12. Severe suffering of head alternating with that of intestines.
13. "Colds," and again, and still again "colds."
14. "Severe lumbago and fever."
15. Muscular Exhaustion.
16. Heat.
17. "Intermittent cephalalgic fever."
18. "Simple (cardiac) hypertrophy." "Heart disease."
19. Albuminuria. ("Profound albuminuria.")

With the last symptom we have the indication of the organic disease, nephritis, that caused the death. The modern physician sees in the others only functional affections—the symptoms of a constantly acting cause of reflex mischief, attacking successively and unsuccessfully one set of organs after another which were able to rid themselves of the "insult" (speaking at once physically, medically, and morally) until, at last, one was found which was compelled to succumb. The graft of Tourainian devil-may-care upon French extremism exaggerated Balzac's neglect of his health so that when his exhausted eyes and brain, and jaded vital powers compelled him to sit and stare at his paper in blank apathy and asthenia, he was still obedient to the ceaseless inner cry which relentlessly commanded him to "go on."

The excerpts hitherto made do not show that there was another suffering organ which bore the insult at first with wonderful success, but which, being the most abused of all, was finally forced to renounce. This is illustrated in these citations.

Every evening an inflammation of the eyes warns me that I have gone beyond my strength. (1836).

I risked an ophthalmia on Mt. Cenis. (1838).

I am beginning to have trouble with my eyes, and that grieves me; I shall have to cease working at night. (1839).

His head was apt to lean to one side. Biography.

. . . . . work fatigues me, the symptoms that happiness and the journeys of this year drove away are returning. My eyes throb, the temples also, and I feel weary. I have had to buy a candelabrum for five candles; three were no longer enough, my eyes pained me. (1845).

A letter for me, you see, is not only money, but an hour of sleep and a drop of blood. (*Letter to his Mother.*)

I can hardly see to read and write. I have some trouble in my eyes which prevents either reading or writing. It comes from a draught of air, and the present medical treatment. The doctor is not alarmed. . . . . Oh, my poor eyes,—once so good! (1850).

I can no longer read or write.* (1850).

His eyes, once clear and far sighted, were covered with a film or veil. (Dr. Macquart, in 1850).

* I have kept that sorrowful line,—the last, probably, that the author of the *Comédie Humaine* ever wrote. It was, although I did not comprehend it at the time, the supreme cry of the thinker and the worker: "*It is finished!*". (Balzac's sister).

In the treatises and case-histories, "migraine" is noteworthy as presenting rapid changes in the symptoms, quick transfers of the morbid reflex from one set of organs to another. This has been the rule in the biographic clinics of the 16 patients I have previously reported. It is especially so with Balzac who was so happily constituted that all parts of his system were equally strong and resistant to the derouted reflex. The citations I have made illustrate this. Similarly the fact is evident of the sudden and seemingly inexplicable alterations of abject wretchedness and suffering with perfect health, strength, and spirits. For centuries this has been a well-known characteristic of "migraine." Balsac's case also shows it, and it also illustrates the other old-fashioned fact that the manifold diseases or symptoms depend absolutely upon the amount of ocular labor done, and the immediate relief, the re-established health, in all the early stages of the disease and, (except where the outrage has been insane) from ocular rest, disguised under the name of travel and recreation:—*

I was worn out with the labour of writing *Louis Lambert*; I had sat up many nights and so abused the use of coffee that I suffered pains in my stomach which amounted to cramp. (1834).

After the "Absolu," Dr. Nacquart thought me so debilitated that, not wishing (as he said in his flattering way) that I should die on the last step of the ladder, he ordered me my native air, and told me to write nothing, read nothing, do nothing, and think nothing—if I could, he said, laughing. (1834).

I will write a little more regularly in future. The doctors have obtained that I should change my way of life. (1834).

Last week I took in all but ten hours' sleep. So that yesterday and to-day I have been like a poor foundered horse on his side,—in my bed, not able to do anything, or hear anything. (1834).

I began to work eighteen hours a day. I stood it for fifteen days, from the last letter till December 31; then I risked an insomnia; and I am now waking from a sleep of seventeen hours, taken at intervals, which has saved me. (1835).

. . . . . horrible pain which rent me during the ten days I rested after "Père Goriot." (1835).

The finishing of "Seraphita" kills me, crushes me. I have fever every day. (1835).

Yes, I am altogether better. I have recovered from the fatigues of the journey. (1835).

Since I wrote you I have been very ill. All these distresses, discussions, toils, and fatigues, produced, at Saché, a nervous, sanguineous attack. I was at death's door for one whole day. But much sleep and the woods of Saché put me right in three days. (1836).

I am ordered to go to Touraine for a month to recover life and health. (1836).

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* An occasional exception occurs when students and writers take their books with them, and keep up the ocular labour only a little less strenuously than when at home.

How, despite his intense occupation with his literary work, Balzac was compelled to travel, is illustrated by the journeys he took. In 1831 he was at Nemours; in 1833 at Nemours, Augoulême, Lyons, Switzerland, and again at Augoulême, Neuchatel; in 1834 in Switzerland; in 1835 at Vienna; in 1838 in Sardinia; in 1837 through Italy and Austria, etc.

I must submit to physicians, humbly, or I shall quickly be destroyed. (1836).

Touraine has given me back some health. (1836).

None but myself know the good Switzerland does. (1837).

The moment the publication of the last part of the "Etudes de Moeurs" was over, my strength suddenly collapsed. I had to distract my mind; and I foresee it will be so every fourth or fifth month. My health is detestable, disquieting; but I tell this only to you. My mind feels the effect of it. (1837).

Those two months, so precious, I have just spent, you will tell me, in travel. Yes, but I started only because I was without ideas, without strength, my brain exhausted, my soul dejected, worn-out with my last struggles, which, believe me, were dreadful, horrible! (1837).

Here I am, back in Paris. My health is perfect, and my brain so much refreshed that it seems as though I had never written anything. (1837).

This journey, in refreshing my brain, rejuvenated me, and gave me back my force. (1837).

I travel when it is impossible to rouse my broken-down brain. When I return, I shut myself up and work night and day until death comes—of the brain, be it understood, though a man may die of work. (1837).

. . . . . if there is success, success will come too late. I feel myself decidedly ill. I should have done better to go and pass six months at Wierzohovnia than to stay on the battlefield where I shall end by being knocked over. (1837).

. . . . . I sit down, palpitating, and saddened for days. Such fevers, such starts, shaken by inward convulsions, break me, crush me. (1838).

. . . . . I am perfectly well without aches or pains, in my young house. (1838).

My situation is more painful than it has ever been. Doctor Nacquart preaches vehemently a journey of six weeks. (1840).

I fell ill. I had to travel. (1844).

. . . . . spent the rest of the month in taking baths of three hours to quell the inflammation that threatened me and in following a debilitating regimen. No more work, not the slightest strength, and I continued till the beginning of the present month in the agreeable condition of an oyster. At last, Dr. Nacquart being satisfied, I began to write again . . . (1841).

I am well in spite of a slight grippe. (1844).

Yesterday I consulted M. Roux (Dupuytren's successor, alas!), and he strongly advised me that a journey on foot was the only means of arresting the inclination of cerebral organs to inflame. (1844).

I had yesterday, after writing to you a violent rush of blood to the head. From three in the morning till three in the afternoon I corrected without pausing the folios of *La Comédie Humaine* . . . . . (1844).

This work, which was equivalent to writing in twelve hours an 8vo. volume, brought on the attack. My nose bled from yesterday until this morning. But I feel myself more relieved than weakened by this little natural bleeding,—beneficial, I make no doubt. (1844).

All is well; the neuralgia pains have disappeared as if by magic. (1844).

This interruption, dear, is the result of the doctor's prescriptions. I have not left my bed; leeches were necessary and blisters for three or four days; but this morning the symptoms and the atrocious pain of this inflammation have ceased. In three days, at the latest, I can resume my work. (1844).

I am perfectly well again and have gone back to work. (1844).

I have recovered my faculties, more brilliant than ever. (1845).

My ability to work only lasted two days. I am seized by spleen. (1845).

My health is excellent, and my talent—oh! I have recovered it in all its bloom. (1846).

I am very much better; the doctor was a prophet; in two days all was over and restored in good order; I am still dieting, but to-morrow I can resume my usual food and my work. (1846).

I am now only a man without strength, food, or appetite. But the

intestines are all right again, I believe; and next week I shall finish with the "Constitutionnel." (1846).

I feel young, full of energy and of talent before new difficulties. (1846).

. . . . . Dr. Nacquart scolded me well when he found me at my table writing, after all he had said to me about it. Neither he nor any of his friends the doctors can conceive how a man should subject his brain to such excesses. He said to me and repeated his words with a threatening air, that harm would come of it. He entreated me to at least put some interval of time between "the debauches of the brain," as he called them. The efforts on "Cousine Bette," improvised in a week, especially alarmed him. He said, "This will neccessarily end in something fatal."

The fact is, I feel myself in some degree affected: sometimes in conversation I search, and often very painfully, for nouns. My memory for names fails me. It is true that I ought to rest. (1846).

Readers of the clinical biographies of Carlyle, Wagner, and others have been struck by the fact that prolonged literary labor, when eye-strain exists, is peculiarly prone to produce some times exaltation, more commonly profound depression, "nameless suffering," "indescribable torture," not seldom deep gloom, melancholy, and despair. At times and in some cases there is simply an astonishing inhibition of cerebral activity, resulting in inability to make the mind work, however spurred, and the patient sits before his task in complete empty mindedness. All phases, as one would expect, are illustrated in Balzac:—

I have the weakness and the species of physical melancholy that comes from abuse of toil. (1834).

. . . . . finding myself so changed by toil, there come moments of Lassitude, efforts, tension, headaches, weariness, all go on . . . . . (1835).

I have now been at home eight days, and for eight days I have been making vain efforts to resume my work. My head refuses to give myself to any intellectual labour; I feel it to be full of ideas, but nothing comes out. I am incapable of fixing my thought; of compelling it to consider a subject under all aspects and deciding the march. I don't know when this imbecility will cease. (1837).

After writing this letter I must take a bath, not without terror, for I am afraid of relaxing the fibres which are strung up to the highest tension. (1837).

I don't know anything more wearying that to sit a whole night, from midnight till eight o'clock, beneath the light of shaded candles, before blank paper, unable to find thoughts . . . . (1837).

I am now at a moment of extreme depression. Coffee does nothing for me; it does not bring to the surface the inner man, who stays in his prison of flesh and bones. (1837).

I do not believe in what they call my talent. I spend nights in despairing. (1837).

I am not well in body or in mind. I feel a horrible lassitude, which, in regard to my head, is not without danger. I have no longer force or courage. (1838).

I am frightened at a species of interior old age which has come upon me. (1840).

You will never know until I explain it to you verbally, the courage I display in writing to you. This morning I stayed till eleven o'clock in bed, unable to get up. It is horrible suffering which has its seat nowhere; which cannot be described; which attacks both heart and brain. I feel stupid, and the further I go, the worse the malady becomes. (1843).

I don't know whether it is a phase of the brain, but I have no continuity

of will. I plot, I conceive books, but when it comes to execution, all escapes me. (1844).

. . . . . my ability to work only lasted two days. I am again seized by spleen, complicated with nostalgia, or, if you like, by an ennui I never felt before. Yes, this is *true ennui*; nothing amuses me, nothing distracts me, nothing enlivens me; it is a death of the soul, a death of the will, the collapse of the whole being. (1845).

. . . . . in spite of this heat my health gets better and better; nourishment no longer distresses me; and the intestines are coming back to a normal state. The doctor says my illness came only from heat, which is to me what it is to you. One must cling to doing one's duty, as I do, in order to work under this physical dissolution. (1846).

In passing it may be advisable to notice that with one or two exceptions—that of overwork, and carelessness as to food, Balzac's illnessess were not due to unhygienic or immoral life. He was probably as chaste as any Frenchman that ever lived. His heroic self-sacrifice in work, for that, left him little or no time, even for a minimum of social life. He never smoked, and he drank little or no alcoholic liquors. His chief hygienic sins were carelessness about food, and reliance upon coffee to supply its place, and of course his lack of exercise, coupled with inordinately continuous literary labor, and consequent loss of sleep.

My sobriety and regularity of life can alone save me under the ardent work I have to complete to win that liberty so longed for. It is now twenty days that I have risen at midnight and gone to bed at six o'clock. (1835).

If (in spite of a regimen prescribed by doctors who have traced me a manner of living so that I may struggle without danger through my work), *if* I fall ill. (1835).

My health is extremely bad. Coffee no longer produces me mental force. (1836).

The time during which the inspiration of coffee lasts is lessening. It now excites my brain for only fifteen days consecutively,—fatal excitement, too, for it gives me horrible pains in the stomach. (1836).

She only divined that I had eaten nothing for days. (1837).

. . . . . for twenty-five days I have only slept a few hours; that I have been within an ace of apoplexy; that I shall never again undertake such a feat of strength. . . . . (1837).

As I had been twenty-five days without sleep, I have now been a month employed in sleeping sixteen hours a day and in doing nothing the other eight. I am renewing my brain to spend it again immediately. (1838).

Yes, there have been days when I proudly ate a roll of bread on the boulevard. (1840).

That Balzac had not insomnia, the common symptom of "an overtaxed brain," of "migraine," etc., is evidence of the marvelous perfection and resistance of his cerebral and nervous system. Probably no one ever forced himself so habitually to go without sleep. The quotations given illustrate this. Even in 1842 he speaks of allowing himself only two hours of sleep a night. In 1846 he writes of a continual fever of inspiration and insomnia, by which word he evidently means pervigilium or enforced wakefulness. In 1838 he says he went 25 days with-

out sleep (undoubtedly an exaggerated statement), but adds that for a month he had been sleeping 16 hours a day.

The Problem of the Medical Profession of that day before such a patient is illustrated by the following quotations:—

Dr. Nacquart put me into a bath for three hours a day, on ten pounds of grapes, and wanted me not to work; but I do work all night. (1835).

My health is at this moment so greatly affected that Dr. Nacquart issues an edict which has to be obeyed. Coffee is suppressed. Every evening they put upon my stomach a linseed poultice. I am kept on chicken broth, and eat nothing but white meat. I drink gum water, and they give me inward sedatives. I have to follow this regimen for ten days and then go to Touraine for a month, to recover life and health. All the mucous membranes are violently inflamed; I cannot digest without horrible suffering. (1836).

I fell ill. I had to travel. As soon as the result was obtained I was seized with an inflammation of the blood which threatened to attack the brain. I went to Touraine for two weeks; but on my return Dr. Nacquart condemned me to a bath of three hours a day, to drink four pints of water, and take no food, inasmuch as my blood was coagulating. I am just out of this barbarous but heroic treatment, with complexion clear, refreshed, and ready for new struggles. (1841).

I am not very well; yesterday I went to the doctor; the neuralgia must be fought with leeches and a little blister; that will take three or four days. I have been doing "César Birotteau" with my feet in mustard, and I am now writing "Les Paysans" with my head in opium. (1844).

Nacquart said to me brutally yesterday, while writing his prescription, "You will die." "No," I said, "I have a private God of my own; a God stronger than all diseases." (1844).

I am still here, detained by illness. Alas! I have paid tribute to 1848. I have come to such a pass that I can no longer brush my hair without suffocation and palpitation. Twice I nearly strangled from the impossibility of inhaling and exhaling my breath. I cannot go up stairs . . . . . Happily there is a doctor here, a pupil of the famous Franck (the original of my *Médicin de Campagne*). He and his son say the trouble is a *simple hypertrophy* and answer for my complete cure. (1849).

The trouble in my heart (not to speak of those in my stomach which are a consequence of it) has increased to such a degree that the treatment is renewed. I have been auscultated, and the disease named (so as not to alarm me) *simple hypertrophy*. It appears that the father undertook the cure against the advice of the son, who, imbued with our French ideas, thought it was all over with me. . . . . (Here follow many details of his illness and treatment). However, the doctor is confident he can complete the work and make me as good as new. He is a great physician, quite unknown. He does justice to the French faculty; says they are the first in the world for recognizing and diagnosing diseases; but declares them absolutely ignorant, with a few exceptions, of therapeutics,—that is, the knowledge of the means of cure. Is it not dreadful to think that Frédéric Soulé died for want of this doctor of mine?—for two months ago I was as ill as Soulé was when he put himself under treatment." (1849).

I have had to back to the treatment for heart-disease. My doctor is a great physician, buried at Wierzschovnia, who, like many another genius, dislikes the art in which he excels . . . . . He has invented *powders*. . . . . He keeps the composition of his powders so great a secret that he will not even reveal it to his son. He has radically cured persons much worse than I. (1849).

The doctor is not alarmed. He wants me to continue the treatment six days longer. I have had a serious relapse in my heart-trouble and also in the lung. I have lost more ground than I had gained. Every motion that I make stops both speech and breathing. (1850).

It is plain to all who read this history now that Balzac was in the grasp

of a mortal malady as early as 1847, before he went to that cruel Russian climate, which gave him his *coup-de-grâce*. After he was taken ill at Wierzschovnia, he trusted, with his natural confidence, to a local doctor, who tortured him with remedies to no purpose, against the advice of his own son, a physician of broader intelligence. Dr. Nacquart, his lifelong friend and physician, being asked to give the causes of Balzac's death, wrote a long and rather irrelevant statement, in which, however, the following significant facts appear: "A longstanding disease of the heart, aggravated by overwork at night, and the use, or abuse, of coffee had taken a new and fatal development. . . . . His breathing was short and panting, and forbade all active motion; his voice, formerly so strong, was weak and broken; his eyes, once clear and far-sighted, were covered with a film or veil. The patient retained hopes of himself; but science had in the first instance diagnosed the complication of a marked albuminuria (*profound albuminuria*), and could see no prospect of recovery." (Balzac's sister).

For several hundred years pseudotherapeutics such as are shown in the last excerpts have been handed down from one medical generation to another. Were it not that these patients are treated in exactly the same way to-day there could be no word of regret, pity, or criticism of the elders; they could not know the light that has been thrown on the etiology of the motley and somewhat ludicrous crowd of patients now labeled "hysterics," "neurasthenics," "degenerates," and all the other dozen or two names invented to disguise ignorance. Nacquart, of course, had a patient who would break rules, but it was chiefly because Nacquart had no reason for his rules, and, if Balzac would have worked less extremely, he might as well have doctored himself. A most trustful and "good" patient Balzac assuredly was. Even when he fell into the hands of the quackish Russian physician his confidence in the trickster remains perfect.* The score or more of "diagnoses" made of Balzac's troubles, all except one, resolve themselves into blunders as to facts, ignorances as to the cause of the facts, lucky or unlucky empiricisms as to the cures. Nacquart held pretty firmly (as we all do when we can't cure), to the advice to stop working and travel. Why writing and reading produced the symptoms and sufferings so evidently consequential, was beyond explanation except by the words used to-day in such cases, — "Brain-fag," "Cerebral exhaustion," "Over-work," and the rest. Nacquart was excusable. A thousand present-day neurologists and diagnosticians, "leaders" of the profession, so-called, are not excusable. The sole lesson that seems to come out of their dogmatism and unprogressiveness is that they would prefer their patients should not be cured rather than to have them cured by means of ocular treatment.

The only scrap of what might be called direct evidence to be found

* His faith indeed was somewhat noteworthy, as it illustrated in his implicit confidence in somnambulists, "magnetizers," etc., whom he constantly consulted. He is even proud of his own "magnetizing" powers.

that Balzac suffered from eyestrain is in the incidental remark of his sister that his eyes had been far-sighted. This, however, means only that he did not have myopia, nor so much astigmatism as to prevent distant vision. But in this case the direct evidence is not needed, because the indirect is so clear and so cumulative. His symptoms, and especially their life-history are precisely those of most who consult the modern expert oculist. The usual immediate and permanent disappearance of such symptoms in those under 45 years of age, by means of scientific refraction-work, is demonstrated every day in the oculist's office. Without that is any modern physician able to cure such patients? Never, except by ordering, as of old, that the patient shall stop all writing and reading. The silencing demonstration that Balzac's brain was not "inflamed," "exhausted" or otherwise diseased, is the fact that the works produced in his last years, just before his marriage, free from financial worries, happy and hopeful, show all the invention, power, objectivation, — all the perfections of technic, in a word, of those of ten or fifteen years previously. What, then, had failed? Simply ability to see, "at close range," that is, in writing and reading, so continuously as before. The long-standing and single cause of mischief, the reflex which had attacked one set of organs after another, was, simply, "eyestrain." If Balzac had not been "far-sighted," but had, say, one diopter of simple myopia alike in each eye, even his unhygienic habits could not have broken him at 47 and killed him at 50. The simple physiologic reason for this is that in all the human body there is no muscle that can be long and continuously innervated. That is a task Nature has been unable to carry out, and a hundred anatomic mechanisms illustrate this truth of physiology. Even if Balzac had been without ametropia he would still have had enormous eyestrain, because the ciliary muscle, although acting in a way that might be called "normal," was put to impossible tasks. Accommodation would always be subnormal under such conditions. The ciliary muscle of the eye, that of "accommodation," in the "far-sighted," is required by such work as Balzac did to be daily in a constant state of contraction for hours, and even for twenty of them. The attempt at this physiologic impossibility produces the morbid results we know and which are so capitally illustrated in Balzac's case. But, of course, no pair of human eyes has ever been tested in which absolute "emmetropia" existed, and the least ametropia would vastly increase eyestrain in such a case as that of Balzac. Indeed, local ocular disease preceded other lethal organic diseases, and comparative blindness (not cataractous, or albuminuric) preceded death. All oculists know that between the ages of 40 and 50 eyestrain is necessarily doubled by what is technically

called presbyopia. All biographers deplore and wonder at Balzac's death at 50. Seven years before his own death, however, occurred that of another which removed the chief obstacle to his marriage with the woman he had so long, so purely, and so fervently loved. To this was added such an improvement in his finances that it was possible to lessen the exorbitant demands upon his eyes and mind. Despite these things, despite comparative wealth, despite love and travel and happiness, that his health grew steadily worse, and that he died immediately after his marriage,—these things cannot be explained except upon the theory of eyestrain, which had long lessened his resisting power, and which when reinforced by presbyopia, finally produced the nephritis which killed him.

THE CURE OF TUBERCULOSIS.

The interest of the closing sitting of the Congress on Tuberculosis centred in a statement by Professor Behring respecting his new cure. This was made in Germany by the Professor himself. * * * *

Here follows the text of the paper.

The conclusion of this remarkable paper was greeted with cheers, but there was no comment or discussion. * * * Professor Behring's announcement is to be regarded simply as the conviction of a man of high scientific reputation, known for the care with which his researches are invariably conducted. * * The fact remains that his discovery does not seem to have reached a stage at which it could have been submitted to and discussed by the congress, and that its truth still remains to be demonstrated. Like Koch's tuberculin and numerous serums and vaccines that acquired a monetary notoriety, it is derived from the tubercle bacillus, but is supposed to act on the cells and not on the serum of the blood or the fluids of the body. It is this difference in its action which, according to Sir William Broadbent, constitues the new departure in Professor Behring's cure, which, so far as human beings are concerned, has scarcely reached even the experimental stage. Furthermore, it has not yet been subjected to independent investigation. While confident that some serum or vaccine will eventually be discovered capable of greatly promoting the prevention and cure of tuberculosis, Sir William Broadbent does not anticipate the discovery of a specific for all cases.

The *Weekly Times*, Oct. 13, 1905.

Messrs. P. Blackiston's Son & Co. have favoured us with advance sheets of the fourth edition of Coplin's Manual of Pathology. It will appear in the course of the present month.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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Remittances advertisements or business communications are to be addressed to the Montrea Medical Journal Co., Box 273 ; all others to the Managing Editor, 216 Peel Street, Montreal. Al communications intended for insertion in this Journal are received with the understanding tha hey are contributed exclusively to this Journal. A limited number of reprints of articles will be urnished to authors at cost price, if a request to that effect accompany the manuscript.

VOL. XXXIV. NOVEMBER, 1905. No. 11.

DISCOVERY AND COMMERCIALISM.

The announcement of Professor von Behring that he has discovered a cure for consumption, which, however, can not as yet be disclosed, has done medical science harm instead of good. What the motive for the statement was, is as yet largely a matter of conjecture, and does not greatly matter. It is said that the intention was to forestall or prevent statements of a similar kind from some other quarter: these matters of local politics make a very uninteresting explanation, and no excuse at all for such a proceeding. Others have said that he wished to obtain the profits accruing therefrom not for himself, but for his laboratory, to help future investigation. However worthy this plan may be, Prof. von Behring knows at what cost it can be carried out. When a man makes a discovery that is useful for the welfare of human kind, our custom demands that he make it known to the profession at large: if he conceals its nature because it is not yet as perfect as he can make it, he makes the admission that he had no business to bring it out: if he con-

ceals it for personal profit, he is a quack: if he conceals it for the profit of an institution, he is liable to be called one, however good his motives. At the present moment there must be thousands of consumptives harboring bitter thoughts against an honored member of the medical profession. This much, we say, from the standpoint of the looker-on.

On the side of the laboratory discoverer there is much to be said. Again and again, it has happened that discoveries of world-wide importance have been made, and the profits accruing from the discoverer's brains have gone to the manufacturer's pockets. In Behring's own case, hundreds of thousands of dollars, not to say millions, have been made by manufacturers out of diphtheria serum. We venture to say that there ought to be a possibility that a discovery such as this should be put at once into the hands of the highest authority in the government of the country concerned, that the government should, in its name, patent the idea, make freely public the nature of the remedy, and administer the patent for the profit and benefit of the discoverer or the institution to which he belongs. When an air-brake is devised that adds to the safety of the travelling world, we have never yet heard that it was made public for the benefit of the first manufacturer to take it up; even if they could, a company of physicians is not allowed to manufacture Westinghouse air-brakes, save at a price. Why should manufacturers be allowed to grow rich from Behring's serum and pay nothing for it?

THE MONTREAL MATERNITY HOSPITAL.

The old Maternity Hospital at 93 St. Urbain street is now a thing of the past, and the institution appears in its handsome new quarters on the corner of St. Urbain and Prince Arthur streets, whither the patients were moved about the middle of September. The building, a handsome structure of pressed brick with stone dressings, has a frontage of 130 feet on one street and 80 feet on the other, and has cost more than $100,000, of which Sir William C. Macdonald has contributed $60,000.

The hospital contains 56 beds of which 13 are in private wards; the operating and preparation rooms are on the top flat, and are, as might be expected, modern in all regards.

It is a matter for congratulation to many that this long-desired building is at last occupied: most of all, perhaps, are those ladies, the directors of the hospital, to be congratulated who have been so unsparing in their efforts to bring about the change. The students in obstetrics will be for the future in much better circumstances for instruction, and it is undoubted that a large number of patients will now avail themselves of the hospital, and that its usefulness will be much increased.

NEW NURSES' HOME AT THE ROYAL VICTORIA HOSPITAL.

The erection of the new Nurses' Home is now in progress and it is expected to be ready for occupancy early next year.

It is situated immediately to the west of the surgical wing of the hospital and connected with it by a bridge. It will provide recreation rooms, a lecture hall and bedrooms, etc., for a staff of over 100 nurses and when completed will be one of the finest in the world.

It is being built of grey limestone similar to the hospital and in style somewhat resembling it. There will be 5 stories in all and the construction will be the most perfect that modern science can produce. The interior is to be of steel and terra cotta. The floors will be of hard maple, and highly polished.

The building will be rendered as far as possible fire-proof, with two complete sets of staircases, besides outside fire escapes.

The dining room will measure 58 ft. by 30 ft. with serving pantry and kitchen adjoining. A large assembly room 38x36 ft. with a massive fire-place, will be capable of extension by flexible folding doors. It will contain also the library 20x14 ft. with fire place designed to burn logs.

Each bedroom will be 10x12 ft. with a cupboard 3x5 ft.

The sanitation and ventilation will be of the very highest order and altogether everything possible is being done for the future comfort of the nurses of the Royal Victoria Hospital.

ST. PAUL HOSPITAL FOR CONTAGIOUS DISEASES.

The new Contagious Diseases Hospital in connection with the Notre Dame Hospital is now completed and was opened by Archbishop Bruchesi on October 28th. It is situated near Parc Lafontaine and will be connected with the new Notre Dame Hospital, by a tunnel running under Maisonneuve street.

The hospital is composed of four buildings, and administration building and three disease pavillions.

In the Administration Building are situated the kitchen, heating and lighting apparatus, rooms for the staff, nurses, laundry, etc. There are also in the left wing of the building rooms for doubtful cases and for erysipelas, and the dispensary.

The diphtheria pavilion, 120 ft. x 28, is three stories high. The ground floor is for light cases and the other two stories for male and female wards. There is a visiting room in each ward, covered in with glass, so that the friends and patients may see one the other, without risk of infection. In this pavilion is also situated an operating theatre.

The measles and scarlet fever pavilions are somewhat smaller than the diphtheria, but are fitted out in much the same manner.

The various buildings are connected with the administration building by means of tunnels.

The walls in all the buildings are smooth, there being no mouldings or projections to harbour dust or microbes.

The disinfecting chamber is situated below the administration building.

All the drainage before leaving the hospital passes through an antiseptic tank and is thoroughly disinfected before passing on into the river.

Dr. Stephen Lett, of Guelph, Ont., died on October 11th, of paresis. Dr. Lett devoted himself to the study of mental diseases, and was on the staff of the Hamilton, Toronto and London asylums, of which last he was assistant-superintendent before he removed to Guelph, where he took charge of the Homewood Sanitarium. He saw service in the Fenian Raid, and was always a man of active citizenship. The onset of the illness from which he finally died was observed first by Dr. Lett himself, although he believed that the prognosis in his own case would be a favourable one; since 1901 he has not been able to follow his profession.

The Winnipeg Medical Association has a membership of 97. The newly elected officers are: President, Dr. Gordon Bell; 1st vice-president Dr. E. W. Montgomery; 2nd vice-president, Dr. J. R. Davidson; hon. sec.-treasurer, Dr. Charles Woollard; executive committee, Dr. Mary Crawford, Dr. Hugh Mackay, Dr. A. D. Carscallen, and Dr. N. J. McLean.

Dr. J. A. Simard, of Quebec, died on September 29th, after a long illness. At one time Dean of the Medical Faculty of Laval University, and long connected with it as professor, he practised his profession especially in the diseases of the eye and ear. Dr. Arthur Simard is his son. The funeral service was celebrated in a very impressive manner at the Basilica.

Dr. H. Wolferstan Thomas, formerly Fellow in Pathology, McGill, has recently recovered from an attack of yellow fever, contracted in Brazil, where he is working under the direction of the Liverpool School of Tropical Medicine. His companion, Dr. Breinl, also recovered after a very severe attack.

Dr. R. A. Reeve, Dean of the Medical Faculty of Toronto University, came from Toronto to attend the funeral of the late Dr. Buller: his presence was regarded very appreciatively by the profession here, and was

a tribute not only to a friend of many years, but to one high in the same branch of science as Dr. Reeve himself.

The Association for the Prevention of Tuberculosis has printed a very handsome folder of advice to those afflicted with tuberculosis, both for the betterment of the patients themselves and for the safety of those with whom the patients come in contact. It will be put in general circulation very soon.

Dr. Bruce L. Riordan, of Toronto, has been promoted to the medical charge of the Grand Trunk lines west and north of Toronto; in other positions Dr. Riordan has been connected with the road for more than twenty years.

Professor Simpson, the well known occupant of the chair of obstetrics in Edinburgh, has resigned: although there are two eminent men trics in Edinburgh, has resigned: we understand that Dr. Halliday Croom has been appointed in his stead.

Dr. John A. Mackenzie, Assistant Superintendent of Nova Scotia Hospital, Dartmouth, died on October 12th, the 40th anniversary of his birth; he was a native of Cape Breton, and graduated in Boston. Death followed an attack of appendicitis.

Dr. J. L. Todd, who has spent the last two years in different parts of Tropical Africa in the study of sleeping sickness, has returned to Liverpool, and will be in Canada during the course of the winter. It will be remembered that Dr. Dutton, who was on the same expedition, died of relapsing fever.

Dr. R. F. Ruttan, Professor of Chemistry in the Medical Faculty of McGill University, leaves next month to spend some time in study at European universities.

Dr. Forster, late of the interne staffs of the General and Royal Victoria Hospitals, has been appointed medical health officer for North Adams, Mass., where he has begun practice.

Dr. Lauriston Shaw, physician to and late Dean of Guy's visited Toronto and Montreal recently.

Professor Adami has been invited to attend the jubilee of Melbourne University in April, 1906.

Dr. George Riddell, of Crystal City, Man., died on Sptember 27th, of heart disease; he had practised in that locality for twenty-five years.

Obituary.

PROFESSOR FRANK BULLER.

The death of so eminent a physician as the late Professor Buller is a loss to his profession and to the branch of science to which he devotes himself that cannot be repaired. "There is no man in the world who can not be replaced," said the "Times," when Lord Palmerston died; but to the generation in which he lives there is a loss of knowledge and of experience that is not returned to it; the scientific man of great attainments carries out of the world with him the aggregation of knowledge which has come to him, which has fused with his mind, which can, indeed, fuse with no other mind in exactly the same way, and can therefore, never again give precisely the same result. But a small part of this individuality can he impart by his spoken or written word, and much, with the man, departs. The acquiring of knowledge would be a sorry task if this were all, but a physician of active mind and body spreads his influence beyond the domain of science to that of humanity; and the world of science and knowledge that to-day is the poorer by reason of Professor Buller's death, is richer by thirty-five years of his kindly life.

It would scarcely be becoming that we should in this place insist upon the eminent place in the science of ophthalmology that our late colleague attained, lest we should seem to claim for him a posthumous glory, that he would have been the last to claim for himself. A wide circle of friends and fellow physicians in America and Europe will mourn his death: his many friends because they knew his skill and his attainments, and a far greater number who knew his reputation. It is fitting that we should recall some of the more important advances in his science, with which his name is honorably associated: such are the eye shield which bears his name, the modication of Mules' operation, and the tying of the canaliculi; further mention of these and others will be made elsewhere.

Dr. Buller, was the son of Charles G. Buller, and of Frances Elizabeth Boucher, and was born at Campbellford, Ontario, on May 4th, 1844. He was educated at Peterborough High School and Victoria College, where he graduated in medicine in 1869. Subsequently, in Europe, he studied especially the diseases of the eye, ear and throat, having the great advantage of the tuition of Helmholz and von Graefe. During the Franco-Prussian

war he served as surgeon in the German military hospitals, subsequently occupying a position on the staff of the Graefe-Ewers Hospital in Berlin. In 1872 he went to London and was for four years connected with the Royal London Ophthalmic Hospital (the well known "Moorfields"), for the last two years as chief house-surgeon. Here he formed intimate friendships with many leading English ophthalmologists, which lasted to the end. He was perhaps the very first to introduce to London the procedure instituted in Germany, of ophthalmic examination by the so-called "direct method." He became a member of the Royal College of Surgeons of England, and in 1876 returned to Canada, beginning practice in Montreal, where he resided till his death in the enjoyment of a constantly increasing reputation.

For many years his clientele has been so extensive as to demand the most diligent use of his faculties: yet Professor Buller always responded most generously to the exacting duties demanded by hospitals and university. He was indeed the first ophthalmologist to be appointed to the General Hospital: prior to 1877, each physician and surgeon treated such eye and ear cases as he desired in his own clinics: by the thoroughness of his knowledge and by his mastery of his subject, Dr. Buller won from all a cheerful transference of such cases and founded his department for future time. After seventeen years service in the General Hospital, he accepted the same post in the Royal Victoria Hospital. Upon the foundation of the chair of ophthalmology and otology in McGill University, Dr. Buller was appointed to it, and for twenty-two years his learning and experience were freely given to that institution.

Dr. Buller was a president of the Montreal Medico-Chirurgical Society, and a member of the Ophthalmological Societies of Great Britain and of America; it was while attending a meeting of the latter society at Boston that the first evidence of severe physical weakness became evident. Shortly after his return, the condition was diagnosed as pernicious anaemia, and the course of the disease, though temporarily checked, was progressively downward.

He died on October 11th, 1905, and two days later was followed to the grave by the entire medical profession of this city and by many others.

Dr. Buller is survived by his wife, three daughters and a son.

It is not easy to describe the characteristics of so many sided a man. Dr. Buller had much of the strong persistent force that marks his English race: his picture stands lined in clear definite outlines, and his character had the firmness that his face betokened. A certain brusqueness of demeanour overlay, but did not conceal one of the kindest of hearts; a decisive, if abrupt, mode of thought was reflected in the decisive action which, applied to his profession, carried him far towards greatness. A striking characteristic,—which was part and, in fact, the outcome of his strong nature—was his interest in an obscure case. Such called out all his energy and application, and the possibility of defeat was the only stimulus necessary to invoke the greatest effort of which he was capable. To this may be attributed much of the success that he attained, because such cases make the reputation of the one over the many: the reputation which he gained, he was ever jealous to guard, and his painstaking care was a byword. The physician who safeguards himself by safeguarding his patient first, fulfils "the greater commandment."

A colleague who knew him very intimately, says:—

"In very delicate cases, where he feared to trust patients in the hands of untrained attendants, and they were too poor to hire professional nurses, he has been known to stay with the patients all night, after an operation, and attend to the dressing himself, lest the eye, so tender and in such a precarious condition, might suffer needless pain or be injured through a slight mistake. The poor were given the same attention as the rich.

"He would never admit defeat; this was one of his strong points. It inspired confidence in the patient, and study was often and often rewarded with success in cases which others had given up as beyond human aid."

It is a simple thing to utter the words and to pen the sentence of condolence; however heartfelt, they seem to pass away with the occasion that called them forth. A far more enduring thing is the knowledge—that can remain for all time in the minds of those that loved him—that in our colleague, our art has lost a very honorable adherent and many a sufferer has lost a friend.

THE LATE DR. FRANK BULLER.

THE WRITINGS OF DR. BULLER.

The writings of Dr. Buller, seventy-six in number, extend over an exact period of thirty years. They are the work of a teacher and practitioner rather than the product of an original investigator. Dr. Buller was from the very outset of his career far too busy a man to spend time in laboratory research; but he was fully aware of the advantages of laboratory work and encouraged it in every way he could. His studies in Berlin were by no means confined to his special subjects, but included as well the courses of the great Virchow. As a result of this early grounding in general pathology he was able to intelligently follow all the advances in this department of medicine and to appreciate the methods which produced them. Dr. Buller's writings are then almost entirely either didactic or clinical in character.

Under the former heading are included numerous papers which were intended primarily to acquaint the profession in general with the most important advances made in the domain of his special subjects. These however, were never mere compilations. They were given out only after an intimate personal experience and were usually accompanied by citations of illustrative cases; they mark Dr. Buller as the leading exponent in this country and one of the first on this continent, of the newer school of ophthalmology which originated with Helmholz, Donders and von Graefe.

Dr. Buller's clinical writings constitute the most valuable part of his work. These are "grains of sand which will in time lose themselves in the pile of human knowledge"; but they were always contributions of great value. They are complete, thorough, and satisfying, and they clearly reflect the mind of a profoundly learned Master. Of clinical compilations Dr. Buller's paper "On Anomalies in the Function of the Extrinsic Ocular Muscles" "represents truly the expense of an enor-"mous loss of time and the exercise of unbounded patience," and his last article on "Methyl Alcohol Blindness" with Dr. Wood, of Chicago, done really when in failing health, is, as Dr. de Schweinitz has justly said "by far the most important contribution to the subject and one to which too high praise cannot be given."

A third class of writings represents Dr. Buller's well known and unceasing efforts to overcome difficult obstacles in ophthalmic practice. His first article describes the shield for the protection of the sound eye in gonorrhœal ophthalmia which has always been associated with his name. It was not the first nor the last attempt in this direction; but it is unquestionably the best appliance ever introduced for this purpose. His modification of Critchett's idea of slitting the outer canthus in gonhorrœal ophthalmia to apply strong solutions of nitrate of silver to the everted conjunctiva is another proof of his progressiveness and of his ability to grasp the newer developments in bacteriology. His alteration

of Mules' operation, which is everywhere accepted, is of the greatest value. He saw that the failures of this operation were due to suppurations brought about by the pyogenic organisms of the conjunctival sac entering the interior of the sclerotic along the sutures passed in a combined way through the sclerotic and the conjunctiva. By suturing first the scleral wound in the vertical direction and the conjunctival wound separately in the horizontal direction Dr. Buller made it impossible for the organisms to produce suppuration within the sclerotic; and the procedure has been undoubtedly more enduring and satisfactory since the acceptance of this modification. His idea of tying the canaliculi to prevent the regurgitation of septic material from the lacrimal sac in chronic dacryocystitis is unique and has been favourably commented upon by leading oculists in Boston, New Orleans and elsewhere. His trial frame was another expression of his ingenuity in meeting certain well-known deficiencies.

The following list represents probably an almost complete bibliography of Dr. Buller's contributions to medical literature.

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2. A New Ophthalmic Operation (letter). Lancet, Vol. 1, p. 661, 1875.

3. The Polypus Knife-hook (letter) B. M. J. Vol. 1, p. 209, 1875.

4. Chloroform and Ether as Anaesthetics. B. M. J., Vol. 1, p. 73, 1876.

5. Remarks on Keratotomy, C. M. & S. J., Vol. 6, p. 481-488, 1878.

6. A case of Acute Purulent Meningitis, the result of Acute Otitis (with Dr. Ross), C. M. & S. J. Vol. 8, p. 343-345, 1880.

7. Pilocarpine in Iritis, C. M. & S. J. Vol. 8, p. 200-207, 1880.

8. Syphilitic Condyloma of the eyelid, with Bubonic Enlargement of Lymphatics over corresponding Parotid. Mont. Gen. Hosp. Rep., Vol. 1, p. 221-225, 1880.

9. The use of Eserine in Ophthalmic Practice. Mont. Gen. Hosp. Rep., Vol. 1, p. 125-139, 1880.

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11. On Diseases of the Mastoid Cells. C. M. & S. J., Vol. 9, p. 257-269, 1880.

12. Introductory Lecture, McGill University. Session 1881-1882. C. M. & S. J. Vol. 10, p. 193-204, 1881.

13. Granular Ophthalmia with Pannus, treated by inoculation. Can. Jour. Med. Science. Vol. 6, p. 233-235, 1881.

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15. Remarks on Optic Neuritis, C. M. & S. J. Vol. 10, p. 641-649, 1881-1882.

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17. Common Errors in Ophthalmic Practice. C. M. & S. J. Vol. 12, p. 147-152, 1884.

18. On Cocaine Hydrochlorate. C. M. & S. J. Vol. 13, p. 421-422, 1885.

19. On Jequirity in Granular Ophthalmia. C. M. & S. J. Vol. 13, p. 144-152, 1885.

20. Melanotic Fibro-Sarcoma of Orbit, removed ten years after Enucleation of the Eyeball containing a Pigmented Growth. C. M. & S. J. Vol. 14, p. 65-71, 1886. Trans. Am. Oph. Soc., Vol. 4, p. 84-89, 1885. Amer. Jour. of Oph. Vol. 2, p. 118-123, 1885.

21. Small Fragments of Rock-crystal removed from the Cornea. C. M. & S. J. Vol. 14, p. 620-621, 1886.

22. Remarks on the Treatment of Gonorrhœal Ophthalmia. C. M. & S. J. Vol. 15, p. 215-219, 1886-87.

23. Tumor of Optic Nerve. C. M. & S. J., Vol. 15, p. 306, 1886.

24. A Rare Form of Ophthalmia Granulosa associated with Ichthyosis. Amer. Jour. of Oph. Vol. 4, p. 346-351, 1887. Trans. Am. Oph. Soc. Vol. 4, p. 582-587, 1887.

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26. A case of Lightning Shock with Recovery. M. M. J. Vol. 17, p. 99, 1888.

27. Peculiar Cause of Blindness. C. M. & S. J. Vol. 16, p. 240, 1888.

28. The Influence of Certain Ocular Defects in causing Headaches. C. M. & S. J. Vol. 16, p. 321-328, 1888. Can. Lancet, Vol. 20, p. 163-167, 1887-88.

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49. The Treatment of Dermoid Tumors of the Orbit. Trans. Am. Oph. Soc. Vol. 7, p. 687-693, 1897.

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60. Report of Cases in Eye and Ear Clinic, R. V. H. (with Dr. Byers). M. M. J. Vol. 29, p. 776-773, 1900.

61. The Medical Student and his Prospective Career. Address to Undergrad. Soc. M. M. J. Vol. 30, p. 69-78, 1901.

62. Diseases of the Cornea. Buck's Ref. Handbook of the Medical Sciences. Vol. 3, p. 283-291, 1901.

63. Affections of the External Auditory Canal. Ibid. Vol. 3, p. 613-621, 1901.

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75. Poisoning by Wood Alcohol. Cases of Death and Blindness from Columbia Spirits and other Methylated Preparations (with Dr. Casey A. Wood, Chicago). Jour. Am. Med. Assoc. Vol. 43, p. 1289-1296 and Vol. 23, p. 1213-1231, 1904.

Reference to cases presented by Dr. Buller before the Montreal Medico-Chirurgical Society and to parts taken by him in different discussions are to be found in the Transactions of the Society in the pages of the Montreal Medical Journal as follows:

(1). Exostosis from the External Auditory Meatus. Vol. XVII., p. 830.

(2). Congenital Polypoid Growth of Conjunctiva. Vol. XXII., p. 627.

(3). White Sarcoma of the Choroid. Vol. XXIII., p. 460.

(4). Discussion on Erysipelas. Vol. XXIV., p. 144.

(5). Discussion on Cancer. Vol. XXIV., p. 726.

(6). Some Interesting Eye Conditions. Vol. XXVIII., p. 229.

Reviews and Notices of Books.

American Edition of Nothnagel's Practice. — Diseases of the Kidney, Diseases of the Spleen, and Hemorrhagic Diseases. By Drs. H. Senator, and M. Litten, of Berlin. Edited, with additions, by James B. Herrick, M.D., Professor of Medicine in Rush Medical College, Chicago. Octavo, 816 pages, illustrated. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, $5.00 net; Half Morocco, $6.00 net. Canadian agents, J. A. Carveth & Co., limited, 434 Yonge St., Toronto.

It is not to the purpose to make critical remarks at this late date, upon Senator's book, which appears in this volume. The editor has a by no means easy task in combining the diseases of the kidney and of the spleen, to say nothing of the "cleaning-up" process which makes it

necessary to deal with that incongruous and friendless group—the so-called hemorrhagic diseases.

Dr. Herrick is engaged on a labor of love for Senator has not suffered at his hands in the slightest, and the additions made by the editor appear to us to be in exactly the same spirit as influenced Senator when he wrote it: the tone is one of great conservatism; it is a pleasure to find a writer in authority who does not feel bound to bow down to classification, for upon student and teacher, clinician and pathologist there is no greater curse laid, than that of having to reconcile conflicting views upon the forms of nephritis. Herrick says he considers the terms Bright's disease and nephritis interchangeable, and states that we must be willing to make a diagnosis of chronic nephritis without being willing to classify more fully—which is a very sensible way of looking at it.

The editor has appended short paragraphs upon subjects that interest us greatly, namely, the surgical treatment of nephritis, cryoscopy and phloridzin glycosuria. For Edebohl's procedure as a routine, Herrick has little but condemnation, and he hints that the physiological explanation is unsatisfactory; the editor adds in his preface that he thinks Senator's silence on this subject is more condemnatory than his own spoken word. Upon cryosocopy, we are pleased to see that there is no wild enthusiasm though the applications of the procedure, few and limited as they are, are given due consideration. The phloridzin test and the methylene blue test are considered as fit to be confirmatory evidence of the better-known methods of measuring the competence of the kidneys. There are two good editorial pages upon the treatment of movable kidney: these are followed by several of Senator's pages upon nephralgia, which it seems to us the editor might have modified with advantage, for the chapter is largely based upon the assumption that because an organic cause of pain was not found at operation or autopsy, such organic cause did not exist; this assumption is very commonly made, is baseless, and has produced many false impressions — to say nothing of case reports. The editor's note indicates that he feels this himself. A few timely paragraphs are added upon the question of diet in chronic nephritis, and the routine milk diet, of which von Noorden is such an enemy, comes in for a due share of condemnation, von Noorden's views being given some mention and consideration.

It may perhaps be remembered that Senator's book opens with an introduction on general subjects such as albuminuria, hematuria, dropsy and uremia, which are discussed in a broad way; the main part of the book is devoted to special diseases: it seems a mistake to include tuberculosis among the neoplasms of the kidney, or of any other organ for

that matter: perhaps to change this lay beyond the rightful power of the editor, but it is an error, especially if the book should be used by those whose pathological opinions are yet immature: among true tumors, hypernephroma at the present day exceeds some of the others in importance and this paragraph would gain in interest if it were fuller. The last chapter, called Anomalies of the Renal Vessels deals with aneurysms and thromboses which should be included, one would think, in circulatory disturbances. The book is fully entitled to its place among the Nothnagel monographs, and is, the writer thinks, excellently edited.

The diseases of the spleen are taken up in a very different way, and the editor has felt his limitations; Litten's work is a strange jumble of all sorts of diseases that have any connection with the spleen, however slight. Properly speaking, there do not seem to be any diseases of the spleen itself: and when two pages an a half comprise all that is to be said upon the physiology of the organ, it is rather incongruous that its diseases should be treated at great length; among the chapter headings are "infarct of the spleen," "abscess of the spleen," "congestion of the spleen" and even treatment is suggested for "amyloid disease of the spleen." There is a great deal of information in all these chapters, but the plan on which it was first brought out, was not in the least excused by the prominence of the writer; and in the American Nothnagel it remains, as it did in the original, a badly constructed building, made of good material.

With this, however, the editor has had nothing to do; what additions he has made are placed in a judicious way and the added paragraphs such as on splenic anæmia, are necessary. The hemorrhagic diseases are put in with additions by Dr. Herrick, with the explanatory note in the preface, that there is no attempt at cohesion: it is, as it were, a sweep-up of remnants.

A Text-Book of Diseases of Women. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania, Gynecologist to the Howard, the Orthopædic and the Philadelphia Hospitals. Second Edition, re-written and enlarged, with 701 illustrations. W. B. Saunders & Co., Philadelphia and London, 1905. Canadian Agents, J. A. Carveth & Co., Ltd., 434 Yonge Street, Toronto.

This text-book appeared two years ago, the work of a practical man, written in a practical way. In this second edition, fifty-seven pages of text have been added, and forty-seven new illustrations introduced, and the author's claim to recognition, even the most up-to-date, is thereby honestly established.

Professor Hirst has written a good text-book. To the uninitiated student its pages present a rather monotonous appearance; paragraph merely succeeds paragraph. Small attempt is made to catch the eye, and the attention by means of italics, head-lines and spacings. In no objective way is the young reader made to single out the more important or essential facts. This is, however, a fault rather in the editing of the book, and does not concern its substance.

On this latter count Professor Hirst writes a good, plain work-a-day thesis. This book is just this.

To the second edition we re-extend the welcome vouchsafed upon its initial appearance—"That among American text-books of Gynæcology it ranks second only to Dudley."

A Text-Book of Clinical Diagnosis, by Laboratory Methods, for the use of Students, Practitioners and Laboratory Workers. By L. Napoleon Boston, A.M., M.D., Assoc. in Medicine and Director of the Clinical Laboratories of the Medico-Chirurgical College, Philadelphia. Second Edition, revised and enlarged. Octavo, of 563 pages, with 330 illustrations, including 34 plates, many in colours. Philadelphia and London: W. B. Saunders & Co., 1905. Cloth, $4.00 net; Sheep or Half Morocco, $5.00 net. Canadian Agents: J. A. Carveth & Co., 434 Yonge Street, Toronto.

The first edition of this work was reviewed in the Journal in January, 1905, and it speaks well for Dr. Boston's work that a second edition is required so soon.

There is not much to add to our previous review, except to state that a few of the newer tests have been added. The subject of cytodiagnosis is considered more extensively, as is also malaria.

Manual of the Diseases of the Eye for Students and Practitioners. By Charles H. May, M.D. Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, N.Y. Fourth edition revised. With 360 original illustrations including 21 plates with 60 colored figures. New York: William Wood & Co., 1905.

The appearance of a fourth edition of Dr. May's Manual of Diseases of the Eye since 1900, would evidently indicate that it has filled a demand and found a very ready market.

The present edition contains considerable additions and despite this has been kept within the compass of the previous volume. The possibility of condensing within the limits of such a small work the main points of almost all diseases of the eye, together with anato-

mical and pathological notes is an almost impossible task. The consequence is that in some respects this work rather suffers from too much condensation, and produces too closely the character of a catalogue.

The book is very profusely illustrated, both with coloured and non-coloured plates, some of which are very good, while others are far from what one could desire. Some of these illustrations could be very well omitted, as for example:—the illustration of a test lens case, as it passes all human understanding what purpose such an illustration could subserve.

Barring this fault of extreme condensation the book is very complete, and as a specimen of the printer's and binder's work it could hardly be better.

SAUNDERS' MEDICAL HAND-ATLASES; Atlas and Epitome of Diseases of the Skin. By PROFESSOR DR. FRANZ MEACEK, of Vienna. Edited, with additions, by HENRY W. STELWAGON, M.D., Professor of Dermatology, Jefferson Medical College, Philadelphia. Second edition, revised, enlarged, and entirely reset. With 77 coloured lithographic plates, 50 half-tone illustrations, and 272 pages of text. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, $4 net. J. A. Carveth & Co., Toronto.

Frequent mention has been made of this series of Atlases, and always in terms of praise. They appeal to one by reason of the accuracy and beauty of the plates, and by the lucidity of the text. The reasonable price is also worth noting. The editor of this volume is Dr. Stelwagon, and he has performed a useful work. The practitioner will find this book adequate to his needs. Treatment is not neglected.

INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMS. Vol. X; M. to MNIKHOVSKI.

This is the tenth volume of the second series of the Index-Catalogue of the Surgeon-General's library. It contains 10,122 author-titles representing 4,690 volumes, and 10,750 pamphlets; and, in addition, 22,622 titles of articles in periodicals. The catalogue to date records 277,353 authors, 250,374 book-titles, and 812,766 articles in periodicals. We make respectful mention of this noble work which is already so well known to all who are interested in the recorded experience of the profession.

PROGRESSIVE MEDICINE. Edited by HOBART AMORY HARE, assisted by H. R. M. LANDIS. September 1st, 1905. Lea Brothers & Company.

The contents of this volume are Disease of the Thorax, by William

Ewart; Dermatology and Syphilis, by William S. Gottheil; Diseases of the Nervous System, by William G. Spiller; Obstetrics, by Richard C. Norris. This number is up to the standard established by former numbers. We note one reference to work which has been done in Canada.

A Manual of the Practice of Medicine. By A. A. Stevens, A.M., M.D. Seventh edition, revised; 556 pages, illustrated. W. B. Saunders & Company, 1905. J. A. Carveth & Co., Toronto. Flexible Leather, $2.50 net.

This manual has been frequently commended. It corresponds with "Carter," in England, and is liked by students.

The Medical Epitome Series; Practice of Medicine, by Hughes Dayton, M.D. Series edited by Victor Cox Pederson. Lea Brothers & Co.

Medical News.

LA SOCIETE MEDICALE.

"La Société Médicale" resumed its work Tuesday, October 3rd.

The secretary gave a retrospect of the work during the last session. The retiring president, Dr. O. F. Mercier, then announced the elections of officers for the present year.

Dr. R. Boulet, former vice-president, was unanimously elected president.

Dr. A. Marien carried the vice-presidency by a majority of one vote over Dr. F. DeMartigny.

Dr. A. Laramée and A. Ethier were returned, the former as secretary and the latter as treasurer.

Dr. Mercier thanked the members for the effective aid they had given him, then rendering light the duties incumbent on the office he was about to hand over to Dr. Boulet; he predicted for the association a most prosperous year under the guidance of his successor.

Dr. Boulet was called to the chair.

A vote of thanks was unanimously passed in favor of the retiring officers and the meeting was closed after routine business.

THE MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The opening meeting of the year was held in the Society's rooms, on Friday, October 6th; the new office-holders took charge, and the evening was pleasantly passed by a smoking concert. Assisted by the

acceptable playing of Mr. F. H. Blair, the members of the society dragged from their lairs the musical talents that lie dormant during the rest of the year, and made night tuneful. The new president, Dr. F. R. Tngland, took the chair; the stupendous efforts of the Rooms Committee in preparing the programme, were lightened by the assistance of Dr. Lauterman.

ROYAL VICTORIA HOSPITAL.

Monthly report for September: Patients admitted, 268; patients discharged, 235; patients died, 18. medical, 74; surgical, 122; opththalmological, 27; gynæcological, 33; laryngological, 12. Out-Door Department: medical, 787; surgical, 336; eye and ear, 389; diseases of women, 81; nose and thoat, 349; total, 1,942. Ambulance calls, 80.

Retrospect of Current Literature.

LARYNGOLOGY AND RHINOLOGY.

An interesting case of complete paralysis of the left vocal cord, associated with dilatation of the left pupil, mitral stenosis, and enlargement of the left auricle, has recently been reported by Atwood Thorne before the Laryngological Society of London. The patient, a dressmaker aged 17, had been troubled with hoarseness for three months.

On examination the left vocal cord was found to be in the cadaveric position and immobile.

The left pupil was dilated, but responded sluggishly both to light and accommodation. There was no localized sweating or other sign of involvement of the sympathetic nerve. The upper eyelid did not droop. The radical pulses were apparently synchronous and equal. There was a history of rheumatic fever about four years previously, and there was great dyspnœa on exertion.

On examination of the chest there was no indication of aneurysm, but evidence of marked mitral stenosis:

Dr. Thorne considered that the laryngeal paralysis was probably due to the enlarged left auricle.

He asked Dr. Wilfred Harris to see the case as two years before he had shown a somewhat similar case at the Harveian Society. Dr. Harris was of the opinion that the paralysis of the left vocal cord was due to the cardiac condition.

Although Dr. Thorne knew the condition was a very rare one, he considered that the paralysis of the cord was due to pressure on the recurrent laryngeal nerve by the enlarged left auricle, the dilatation of

the left pupil being due to irritation of the sympathetic from the same cause.

THE SUBMUCOUS RESECTION OF THE SEPTUM.

In no department of rhinology or surgery as a whole has greater advance been made than in the treatment of deflections of the nasal septum. The older methods which have been as a rule unsatisfactory are being rapidly supplanted by the much more scientific and very successful operation known as the submucous or window resection of the septum.

By this method we are enabled to remove without any destruction of the mucous membrane, deflections of the cartilaginous or bony septum as well as crests or ridges, replacing a bent and distorted septum by one that is quite straight and in which the cartilage and bone which have been removed are apparently regenerated at the same time the patient has complete nasal sufficiency restored.

During the past two years there have been a number of contributions to the literature on the subject, notable among these being:

Freer. The window resection. (*Journal of the American Medical Association*, December 5th, 1903.)

Killian (Die submucöse Feusterresektion der nose scheidewand, *Fraenkel's Archiv. für Laryngologie,* Vol. 16, p. 362, 1904).

(This has since been translated by E. Edwin Foster and appeared in the *Annals of Otology, Rhinology, and Laryngology,* Vol. 14, No. 2, p. 362.)

Hajek (Bemerkung zu der Krieg'scheu Feusterresektion, *Fraenkel's Archiv. für Laryngologie,* Vol. 15, p. 45, 1904).

E. White (Resection of the nasal septum, *Boston Medical and Surgical Journal,* Vol. CL. page 419, April, 1904.)

Spratt (The removal of Septal Spurs and the correction of Deviations of the Septum, *American Medicine,* May 7th, 1904).

Menzel (Zur Feusterresektion der Verkrümnnten Nasenscheidewand, *Fraenkel's Archiv.,* Vol. 15, page 48, 1904).

Zarinko, ueber die Fensterresektion der Deviatio Septi. (*Fraenkel's Archiv.,* Vol. 15, page 248).

Erhard Mueller (Zür Technik der Fensterresektion, Ibid, page 312) Weil (Ueber die Submucösen Resektionen an der Nasenscheidewand. (*Fraenkel's Archiv.,* Vol. 15, page 578, 1904).

Otto T. Freer (Deflections of the Nasal Septum: a critical review of the methods of their correction by the Window resection, with a report of 116 operations. *Annals of Otology, Rhinology and Laryngology,* Vol. XIV, No. 2, 1905.

William Lincoln Ballenger (The Submucous resection of the Nasal

Septum). A new technic with the author's swivel knife, reducing the average time of the operation several minutes. *Annals of Otology, Rhinology and Laryngology,* Vol. 14, No. 2, page 394, 1905.

As lack of space forbids going into minute details concerning this operation reference to the literature will furnish these.

To Killian, of Freiburg, belongs the credit of having introduced this operation in the refined form in which we now find it; the other writers perform the opertion in a similar manner, different only in minor details.

In the paper above referred to Killian records his experience of 220 cases from the operation book of his clinic, 1899-1904, and described minutely the operation to which he has given the name "The submucous window resection of the septum." For more complete details of this operation, the reader is referred to the article previously mentioned. The author credits Krieg with having prepared the way for the operative treatment of extensive and deep seated deformities of the nasal septum; Krieg removed the mucous membrane of the side of the septum operated on, because it was in the way during the operation. Killian considers that with the improvement of technique and instruments the indications for the submucous resection of the septum have become more and more numerous, and he is now convinced that this operation should be used whenever there are sufficient reasons for any operative interference. Contra-indications to the window resection of the septum are, according to Killian: (1) Advanced age; (2) small children, on account of their small nasal proportions; the narcosis is not so satisfactory, and disturbances from growth occur later on. From 12 years on he considers that the submucous window resection of the septum can generally be performed; (3) Patients suffering from different chronic constitutional diseases; but in the early stages of pulmonary tuberculosis, where the patient is well nourished and there is a prospect of arrest or healing of their disease, the restoration of free nasal breathing is often of the greatest value to such. He never operates on cases with temporary healed nasal lupus, because of the danger of a recurrence, and the extension of the lupus process; (5) The operation is temporarily contra-indicated in all patients with an acute disease in the region of the nose, (5) In cases of sinusitis with a decidedly purulent secretion it is best to put off the operation until there is a marked improvement, unless there are urgent reasons for operating; (6) Fresh injuries of the septum should be allowed to heal: (7) In tertiary syphilis of the nose, one must wait till healing has taken place, and a long time has elapsed without recurrence.

Killian's method consists (after aseptic precautions have been ob-

served and the nose cocainized) in making an oblique incision from below upward about one-half a centimetre back of the movable edge of of the septum. This incision should pass completely through the mucosa and a little way into the cartilage.

The muco-perichondrium is then elevated over the convex side of the deviation; this being done, the cartilage is incised, care being observed that the mucosa of the opposite side be not injured.

Through the incision in the cartilage the opposite muco-perichondrium is now elevated; a special knife for cutting the cartilage is introduced between the separated muco-perichrondrium through the slit in the mucous membrane and the deviated portion of the septum is then removed.

If the bony septum is involved it is necessary to use cutting forceps for its removal. Bony spurs are removed with the chisel and bone forceps.

When all the deviated portions of the septum have been removed the muco-perichondrium of both sides are brought into apposition and both nostrils are packed with gauze strips, which are left in the nose for two days and then carefully removed; then, if the septum is not exactly in the middle, it can be put so by placing in the narrower side a tampon to remain for a day or two. The patient can be discharged after a day or two, but should be cautioned to observe care of the external nose that the union be not destroyed.

This article by Killian contains a number of illustrations of the instruments used by him, diagrams of the field of operation which assist materially in giving one a clear understanding of the operation in all its details.

To Otto Freer we are also much indebted for having introduced a modified method for this operation of the window resection of the septum, which in some cases is, perhaps, more applicable than that of Killian. He makes one incision vertically along the apex of the deviation, and another parallel to the floor of the nose extending backward to beyond the limit of the deviation and anteriorly beyond the anterior limit, passing through the lower extremity of the vertical incision. The mucous membrane is separated on the convex side forming an anterior and posterior flap, which may be pushed out of the way, leaving the field of operation clearly exposed to view.

For this operation he has invented a large number of instruments which answer the purpose admirably.

Ballenger, of Chicago, has also contributed an article on the submucous resection of the nasal septum, the main feature of which is the description of a swivel knife used by him for removing the cartilage.

This, he claims, lessens appreciably the time occupied in performing the operation. This instrument consists of a swivel knife between two prongs on a handle and appears to be of great service in the operative technique.

Hajek and others, as quoted at the beginning of this article, have all their own peculiarities of operating, the differences being mainly in the incisions adopted and the instruments used, but they all have the same object in view, namely, the submucous resection of the septum.

For fuller details, the reader is referred to the litrature, mention of which has already been made.

In conclusion, a brief mention of the methods of anæsthesia may be of interest. As a rule, local anæsthesia is all that is necessary, and by this means the operation is rendered painless. Some preparation of the supra-renal gland is used to increase the anæsthesia and assist in rendering the field of operation bloodless, which is the case in nearly all instances. If a general anæsthetic is used, their local application is also necessary. Killian at first made use of 20 per cent. cocaine and 1-1000 adrenalin rubbed into both sides of the septal mucosa. He now injects, submucously on both sides of the septum, 1 cc. of one-half per cent. solution of cocaine to which are added 4 drops of suprarenium hydrochlor., and obtains complete anæsthesia and a bloodless field.

These injections must be made most carefully, or tearing of the mucosa will result, rendering perforation of the septum difficult to avoid. Freer applies powdered cocaine and claims to get most satisfactory results. Finally, it is perhaps only necessary to state that the operation has already proved a great success and in the experience of the reviewer, who has performed the operation in a number of cases, both by the Killiam and Freer methods, the results have been most satisfactory.

W. H. Jamieson.

PATHOLOGY.

UNDER THE CHARGE OF J. G. ADAMI.

RECENT LITERATURE UPON PNEUMOCOCCUS.

Park, W. H., and Williams, A. W. "A Study of Pneumococci."

Collins, Katherine R. "The Application of the Reaction of Agglutination to the Pneumococcus."

Longcope, W. P. "A note upon the growth of Pneumococci and Streptococci from the mouths of healthy individuals and from Pathological conditions."

Norris, C., and Pappenheimer, A. M. "A Study of Pneumococci and Allied Organisms in human mouths and lungs after death."

Duval, C. W., and Lewis, P. A. "Studies on the Pneumococcus."
Buerger, L. "Studies of the Pneumococcus and Allied Organisms, with reference to their occurrence in the human mouth."
His, P. H., Jr., Borden, J. H., and Knapp, C. B. "A Comparative Study of Pneumococci and Allied Organisms."
Wood, F. C. "The Visability of the Pneumococcus after drying; a study of one of the factors in pneumonic infection."
Longcope, W. T. "A note upon the growth of Pneumococci in Blood Serum." *The Jour. of Exp. Med.*, Vol. VII, No. 5, August, 1905.
Romer. *v. Graefe's Arch. f. Oph.*, No. 54.
Axenfeld. *Munch. Med. Wochen*, No. 33.
Rymowitsch. *Russ. Wratsch*, No. 33.
Davies and Brown. *Lancet*, Oct. 8, '04.

The entire number of the *Jour. of Exp. Medicine* is taken up by the work of Rockefeller Investigators upon this organism. They find relative to its distribution that in the winter months half of the people in New York who were examined had pneumococcus in the mouth or throat; in cases where the organism was not found, Norris and Pappenheimer kept examining these throats and were finally rewarded by a positive result in 85 per cent. of their cases. Longcope and Fox found that the spring months were freer than the winter months in this regard, and found the greatest percentage of infections in the months preceding the heaviest pneumonia period of the winter. Buerger finds that in the wards of the hospital, normal individuals frequently acquire the pneumococcus, though not with greater frequency than outside. Pneumonia patients may retain the pneumococcus for months after the attack, though the relative virulence is not stated. Lips of drinking-cups and sputum mugs were found often to harbor virulent pneumococci. Most interesting in this regard is the work of F. C. Wood, reported below.

The germs found in the mouths of healthy persons were, as a rule, less typical than those from pneumonic cases, and proved less virulent to rabbits, but could be rapidly intensified when passed through successive animals. Reasoning by analogy, Park and Williams think that by passage from person to person a similar increase in virulence can be the result, and see herein a further good reason to limit expectoration in public places.

The favorite medium with all these experimenters seems to be 2 per cent. glucose-serum-agar, or neutral serum agar. Buerger, in this publication, as well as in the *N. Y. Path. Proc.*, refers to the certainty with which the pneumococcus can be determined, by its ability to form

"ring-shaped" colonies after 18-20 hours growth on this medium; the edges are raised, the centre depressed, even in the most minute colonies.

The close relationship between the streptococcus and the pneumococcus is commented on by all, especially where the so-called S. mucosus is concerned; this germ is considered to be more nearly related to the pneumocuccus, of which it is probably a variety, than to the streptococcus.

Katherine Collins in agglutination experiments found that there was no definite relationship discernible between agglutination and other characteristics in the different strains of pneumococcus, save with regard to the "mucosus," which, she considers in this respect, a true streptococcus; in this respect her conclusions are somewhat at variance with the others.

Norris and Pappenheimer experimented with the organism as found in the lungs at autopsy. Pneumococcus or streptcoccus was found in nearly all their cases, but they consider that they frequently attain that position by gravity, which causes the mouth secretions to trickle down the bronchi, and so lodge in the lung. They put bacillus prodigiosus, a bacillus which forms a striking red-coloured pigment, into the mouth after death, and in half the cases, they recovered it from the lungs at autopsy, the manipulations from the moment of death to the time of autopsy tending to this displacement. For this reason, they say, cultural findings from the lungs after death are unreliable.

Working with agglutination, Buerger found that all strains of pneumococcus were agglutinated by pneumococcus immune serum, but that ordinary serum was entirely without effect on pneumo- or streptococcus, the mucosus form included; yet immune pneumococcus serum agglutinated the pyogenic streptococci and streptococcus mucosus.

His considered, from his observations, that colds and pneumonia had little or no relation to the existence of pneumococcus in the mouth, save in two cases in which colds existed, and the likelihood, he thinks, was great that these occurred as a sequence of the presence of the organism.

The most interesting part of all these experiments to the physician, was that undertaken by F. C. Wood on the conditions under which the organism will live. In moist sputum, at room temperature, pneumococcus lives 11 days; at 0° C., 35 days; at room temperature in strong light, 5 days; dried sputum harbors living germs in the dark 35 days, in diffuse light 30 days, in sunlight 4 hours. In powdered sputum in the dark it lives 1-4 hours, in sunlight less than 1 hour; on cloth a little longer than on non-absorbing surfaces. When sputum is sprayed, the particles remain in suspension 24 hours, but the pneumococcus dies

in less than an hour; in sunlight it can exist but a few minutes. Wood considers that the mucus of sputum is destructive to the organism. His conclusions are that in the care of pneumonia patients, illumination and ventilation are of great use, and dry sweeping or dusting is to be avoided; articles which cannot be damped ought to be removed. The organisms coming from the patient by sweeping, coughing, or speaking are soon killed in suspension, especially in a sunlit room.

Romer some time ago (v. Graefe's Arch. f. Oph., No. 54, and elsewhere), gave the result of his work on ulcus corneæ serpens by direct injection of rabbit-pneumococcus-serum; his researches on animals of different kinds were very convincing.

Axenfeld (Munich. Med. Woch., N. 33) went farther, in asrcibing to the serum a prophylactic value in the operations in the eye upon unclean territory or upon tissues modified by the existence of a general disease such as diabetes.

Rymowitsch (Russ. Wratsch, No. 33) found in a large series of cases of conjunctivitis (472 cases) during late summer, 18 per cent. caused by pneumococcus; these were especially found in the young, and were often contagious.

Davis and Brown (Lancet, Oct. 8, '04) describe a case of pneumonia with empyema, suppurative anthritis of the knee, and septic peritonitis which recovered—thoracotomy, incision of the knee and laparotomy were performed. In ten and a half years in St. Bartholomew's, 39 cases of multiple localisation of Pneumococcus had died.

An afebrile case of pneumonia is also reported.

REPORTS ON THE INVESTIGATION OF THE IMPERIAL CANCER RESEARCH FUND.

No. 2, Parts I. and II., 1905. Dr. E. F. Bashford, General Superintendent of Research.

Part I. deals with the further statistical investigation of cancer, the terms being used to include all forms of malignant new growth. The conclusion is reached that we can not yet say with certainty that cancer is increasing, in spite of the apparently increasing numbers of deaths attributed to cancer. Nothing in the statistics obtained points to an increase in the death rate from cancer. Sarcoma is found to increase in frequency as life advances exactly parallel to the manner in which carcinoma does; it has generally been supposed that sarcoma is essentially a disease of those of younger age than is carcinoma, but if this be disproved, as seems likely, we shall be less inclined to consider sarcoma and carcinoma as two fundamentally different growths.

The authors show the fallacies in all the reports that have been hither-

to made upon the basis of a "cancer-census." Without going into detail, it may be said that the committee has instituted a card index in which the metropolitan hospitals record all their cases; this takes in all the cases that are determined absolutely to be cancer. A microscopical examination of these cases is essential, and it is felt that though the figures are as yet small, they are correct. Although many cases without microscopical examination can be undoubtedly diagnosed as cancer, yet without the use of the microscope, these must be classed as "examination not made."

Age is a great factor in malignant growth. In mice and cattle large series of cases show that cancer occurs with increasing frequency as age advances; in the dog, horse and cat fewer figures are to be had, but the indication is the same. The reports which seem to show that there is endemic distribution of cancer in certain areas, have constantly neglected the age incidence. The time at which malignant new growths appear in animals stands in direct relation to the absolute duration of life in long- and short-lived animals respectively. The same is borne out in human pathology: the chorion is a short lived tissue and chorion-epithelioma appears at an interval after fertilisation which corresponds to its senile stage of proliferation. The mamma and uterus are slow to arrive at function, are active for a long time, but carcinoma is commonest when these organs are undergoing involution. The skin remains functional long after mddle life, and the age of epithelioma corresponds.

The maximum of normal growth is attained early in intra-uterine life and falls gradually to old age, reaching zero at death: fertilization renews this proliferative process; the proliferative power of cancer does not follow this rule, as is shown by cancer being transmitted continuously for 3½ years after its transference from the mouse first affected.

In giving the recorded cancer death-rate, it is of interest that 275 cases appear from the Montreal General and the Royal Victoria Hospitals from a series of 3,275 autopsies; this is an incidence of one case in twelve. Guy's Hospital post-mortems show one in eight.

Obtaining data from uncivilized races has been attempted, and is progressing: specimens of cancer from tribes where intercourse with civilisation is at a minimum have been already obtained. The report states that there is no reason to suppose that any race is exempt.

Statistics must show age and sex-incidence, the incidence as to organs or primary sites, and the types of growth: these points have not received so full attention as have geographical distribution, diet, climate, and other external factors, which the authors think are of much less importance.

J. McC.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXXIV. DECEMBER, 1905. No. 12.

THE DOUBLE ALLEGIANCE OF THE MEDICAL OFFICER OF HEALTH.*

BY

J. G. ADAMI, M.D., F.R.S.

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Asked by our President, and asked as a Member of that University, which five years ago was the first on this continent to establish a post-graduate course and diploma in public health, to open a discussion upon the importance of the Diploma of Public Health in the development of the Public Health Service, I feel myself placed in a peculiarly delicate position.

In the President's communication I gathered—and therein I imagine I was mistaken—that conditions in the United States were especially under discussion, and my remarks are especially directed thereto. Fortunately most of what I have to say may be applied equally to Canada and Mexico. Notwitstanding my mistake I am largely impenitent, for the main bulk of my audience is surely of citizens of the United States, and inevitably you as a body are most interested in the consideration of conditions bearing upon the development of the Public Health Service in this country.

If he cannot indulge in whole-hearted appreciation but must probe into open sores, your alien critic is altogether uncomfortable, not to say boorish. It is quite right and and proper that those of the family should discuss family failings freely between themselves, but when the neighbour from over the fence calls attention to them it is quite another matter, and he deserves to have things thrown at him.

Now unfortunately you across the line have been discussing this matter of the failings of your public health service quite loudly, and not least loudly at the meetings of this association; and, as I say, asked to take part in the conversation, I find myself in difficulties.

Let me therefore in propitiation say at the start that we in Canada,

* An address delivered as one of the papers opening a discussion upon "The Education of Medical Officers of Health" at the Meeting of the American Public Health Association, Boston, September 25th, 1905.

taken as a whole, are in a worse plight than are you. It is true that, as with your States, so with our Provinces, there exist certain admirably conducted provincial departments having upon their central staffs men of most liberal views, progressive tendencies, and capacity for organization. We have, however, nothing to compare with the more progressive of your Municipal Boards of Health. The rural services are in general singularly weak, and by your Act of 1902, which constituted a Federal Public Health and Marine Hospital Service you are far in advance of us, even if at present constituted that Service does not approach perfection.

I take it that in all institutions of Anglo-Saxon development advance is by compromise. The course offering the least resistance to advance is that which gains acceptance rather than that which is the more ideal and the more thorough. Having made this notable advance it will be possible by further compromise and successive modifications to the Act in question to obtain eventually that constitution of the Public Health Service most suitable to and most serviceable for the American people.

Rather therefore than pretending to criticize from a superior height I would place as an example both to the United States and to Canada the condition obtained in England a dozen years ago.

Previous to 1892 the conditions in England were far from satisfactory. By the act of 1875 the whole country, save the Metropolis, had been divided into sanitary districts, Urban and Rural. There was, it is true, a central authority—the Local Government Board—having supervision of health matters, but it had inadequate authority over the sanitary districts, and the Urban and Rural Boards of Health. These were too largely under the control of the Municipal Corporations and the local magistrates respectively, and in the country districts more particularly; as a matter of convenience to land owners, there was a too frequent tendency either to leave the appointment of the officers of health vacant over long periods of time or to appoint some local practitioner, not on account of his knowledge of the principles of public health, but on account of his "pull," or in expectation that he would cause less disturbance, and accept a lower salary, than the man who had fully qualified himself to hold such a post by an Act passed some years previously. On and after January 1st, 1892, this was markedly changed. In any country districts, or combination of districts, having a population of over 50,000, no one could be appointed Medical Officer of Health unless he was a full graduate of Medicine and was registered as the holder of a Diploma from some university body in sanitary science, public health, or state medicine. An adequate term of years had been given to prepare for

this change, and the Act establishing it had retroactive clauses so as to inflict the least possible injury on those already serving as Officers of Health. The law directed what should be demanded by the bodies affording the Diploma of Public health. Before passing the examination the candidate should provide certificates of having taken special courses in such subjects as chemistry, with more particular reference to water and food analysis, bacteriology, the inspection of premises and sanitary works; and the examination itself must be practical as well as written, and include also a paper upon Public Health legislation and regulations. The act in short demanded special training, and that post-graduate; it created a trained body of Medical State Officials.

A subsequent Act, that of 1894, revolutionized the Local Government of England by the establishment of Urban and Rural District Councils, called County Councils, bodies elected distinct from the Municipal Corporation on the one hand and the Boards of Magistrates, which had held sway in the Rural Districts until then. Under these County Councils the control of the sanitary districts is placed. Under the new law each District Council has to appoint a Medical Officer of Health, or officers, who must not hold any other appointment, or engage in private practice without the written consent of the Council. The Rural County Council, however, may make terms with the District Urban Council for the services of its medical officer, and doing this need not appoint a special officer of its own. These medical officers of health are the officials of the County Councils, who have full powers of appointment. Their duties to the County Council are clearly defined by law. I do not know that it is necessary to go fully into these duties, but briefly note that they have to report on premises dangerous to health, to inspect and report upon premises and on the application of four or more householders; to inspect nuisances; may order the removal of accumulations of filth within 24 hours; may enter and inspect slaughter houses, etc.; are to inspect and examine all kinds of food exposed for sale, or in the course of preparation for sale; may enter premises where animals are kept, supposed to be injurious to health, and take steps to prevent overcrowding, etc. To superintend the ventilation of factories and workshops, the prevention of nuisances arising from noxious vapours in offensive trades, to take samples of milk in course of delivery—all come under their power, while they are empowered to ascertain the course of drains and to issue directions for cleansing and disinfection and the abatement of nuisances; as again they are entitled to be supplied with information of the registered deaths, and any cases of dangerous sickness of paupers—and upon these matters they have to make periodical reports to the County Council.

But in addition to these duties and these reports made to the district authority they have certain duties towards the central authority, the Local Government Board, which indeed contributes to their salaries. The Medical Officer of Health is required to inform himself as far as possible of all influences affecting the health of the district, and as to the cause, origin and distribution of disease in the district, and means of removal or modification of the same; he is required to make a systematic inspection of the district at certain periods for these purposes; he is to be prepared to advise the central authority with reference to the framing of by-laws and regulations to meet special conditions. On hearing of the outbreak of an epidemic of disease it is his duty to visit the spot and enquire into the circumstances. To go further into his duties, he has to report in writing to the central authority on the outbreak of epidemic diseases, and to prepare an annual report each December of the sanitary state of the district in general, with tables of sickness, mortality, etc., etc.

The point that I wish here to make is that the English law recognizes and has taken steps to meet the fact that the Medical Officer of Health owes a double allegiance: while he is the servant of the local sanitary authority he is at the same time an officer of the federal authority, and the only way to obtain a satisfactory Health Service in the United States is by recognition of the same fact.

The same necessity which has compelled matters of quarantine to be under the federal control compels the Government of the United States to have cognizance of epidemic outbreaks throughout the States for the protection of the people of the United States as a whole. Not only must immediate knowledge of such outbreaks be forwarded to Washington in order to ensure a direct common action, but the Federal Government must possess the ultimate (though not necessarily the immediate) power of stepping in and establishing regulations for the stamping out of an outbreak in any State. To the same end it follows that it must possess a general knowledge of the health conditions of each individual State and district in that State, and this it can only gain systematically by direct reports upon these matters from the several districts. Along the same lines similar direct reports are requisite bearing upon birth and marriage rates, mortality and morbidity.

Now the experts capable of affording this information, which should be demanded by the central federal authorities from each district, are the medical officers of health of those districts. For the public weal it would be absurd to have two different sets of experts each endowed with the right to make personal enquiries regarding epidemic disease from house to house, and armed with powers to enforce regulations

and to mitigate epidemics. In other words it is essential that one man in each district accomplishes the work both for the Federal authorities and for the local authorities. The main question now is what conditions can be laid down for the Federal and the State authorities respectively regarding the qualifications for such officers, and the jurisdiction of the same.

When we come to enquire into these matters we find that the difficulties are not so great as on the surface they would seem to be. Regarding the jurisdiction and the duties the matter is relatively simple. The Medical Officer of Health of any district must first and foremost be servant of the State. He must be appointed by the Health Department of the State and the power of appointment and dismissal must be in the hands of that department. As regards the duties, the main work in the way of inspection and the abatement of nuisances, etc., is a State matter. As regards infectious disease and its prevention or arrest, the State and the Federal authorities are equally interested, and the work done for one authority would be that accomplished for the other. As regards mortality and other statistics those also are matters that equally concern the Federal Government and the State. The report of the Officer of Health made for the one body has but to be duplicated for the other, and all that can be asked of the Medical Officer of Health is that the annual report of the general health of the district be so drawn up as to fulfil the requirements both of the State and of Washington. The Federal Government requires certain information from him, and this it must have; and further it must be assured that the information published be from an authoritative source.

The only practical way by which, short of possessing the power of appointment, the Federal authorities can assure themselves that the medical officers throughout the State are trained and competent is by their demanding that those appointed as medical officers shall have had the full special training requisite for the performance of their particular duties. And the only practical way by which they can assure themselves is by their laying down regulations as to what shall constitute a proper training. What is more the routine information required from one end of the country to the other being identical, the standard and the qualifications for all the States in the Union must be identical. In other words the matter of prescribing what shall be the training and what shall be the examination standard of future Medical Officers of Health is pre-eminently a Federal concern. It by no means follows that the central government should itself afford that training, or that there be one portal of entrance through an examination held at Washington.

That is unnecessary. There are numerous centres—centres in every State—at which by the co-operation of the Universities and the State Boards of Health the necessary teaching, didactic and more particularly practical, can be afforded. Each State, indeed, could train its own men. But when, as at the present, one State of this Union possesses no less than sixty-five separate bodies having the privilege of granting the degree of LL.D. it is obvious that the degrees granted by all the sixty-five are not of equal value—that some, indeed, are a trifle discreditable. Thus, under this scheme the Federal authorities should be empowered to select or to recognize the courses of training afforded by certain Universities only. Or what comes to the same thing, but involves less interference on the part of the Federal authorities with State prerogatives, the Act should lay down that the Health Department in each State shall itself select some one or two universities with which to co-operate in establishing a course for the training of its health officials.

I urge therefore that the next stage to be taken in the advance of the public health service in this country is the passage of an Act which shall render it obligatory throughout the Union that on and after a certain date no one shall be appointed Medical Officer of Health who cannot present a diploma from some recognised teaching body showing that he has passed a satisfactory examination, written and practical, in the subjects of Public Health and State Medicine—the course of training and the scope of the said examination to be laid down in the said Act. Following the lines of the English Act, this Act should contain retroactive clauses to the effect that those who had been Medical Officers of Health above a certain number of years should be confirmed in their positions—should not be required to present themselves for examination, and that those appointed within a certain number of years before passage of the Act might be required to present themselves for examination and to present the diploma before a certain date.

A further clause in such an Act should deal with the subject of stipend. In England the central and the local authorities contribute half and half. Here the conditions are very different. England, strictly speaking, is in the position of one of the constituent States, not in that of the whole Union, and the scheme here outlined demands that the Medical Officer of Health of a district affords to the Federal authorities at Washington what is little more than a reduplication of what he has to afford to the central health department of his State. Nevertheless in so doing he performs an essential service to the Federal authorities—a service which, failing him, could only be obtained by them at a very serious expense. Probably the simplest method whereby Washington could acknowledge its indebtedness to the public health

services of the different States would be by granting a subvention towards this end to the Public Health Department of each State.

As an alien, ignorant of the finer play of public feeling on such matters it may be, ladies and gentlemen, that like the alien St. Paul addressing the Corinthians, I speak as a fool; if so, judging from the way in which you have received these remarks, and remembering that we are in Massachusetts, again quoting that same authority I cannot but feel that you suffer fools gladly.

One objection I see to this scheme, namely, that it presupposes that the different States are already divided up into districts, having a population of 50,000 or more, each possessing a Medical Officer of Health. This cannot be the case everywhere. A clause therefore would be necessary directing that the State Board of Health should be responsible for notifications of outbreaks and annual reports regarding such areas of the State as are not provided with duly appointed Officers of Health.

Another objection is, that such a scheme wholly uproots the present method of appointing the Health Officers in the various States. If I understand matters aright there is at present in most States a multitude of health officers for small districts untrained and receiving nominal stipends. I think we will agree that qualified health officers, well paid, are everywhere requisite. The appointment of such officers for each county or combination of counties having a population of not less than 50,000 is of supreme importance, and for groups of this size the States can afford to appoint reasonable stipends. I will only say that this has come about in England—so sought after are good health officers that when a few years ago we thought of approaching certain promising men in England to offer them the position of professor of hygiene at McGill University we were informed by more than one of our advisers there that the stipend we could offer,—and it was respectable—was not sufficient: men could make more as district health officers. Such an Act in short would lead to competition to obtain the best men, and stipends would inevitably increase.

Yet another, and at first sight weighty objection, would be, I imagine, that as State officials, the medical officers of health are liable to be dispossessed at each change of administration. Instead of this being an objection it is the very reverse—that is, if we believe that it is to the advantage of the country to be possessed of an able and a stable body of medical health officials. This very demanding that the officer of health possess a diploma of public health cuts out from the service the mere political opportunist. If the post is to be a political nomination no one will trouble to give himself the better part of a year under-

going special training for the same on the chance of being turned out of office three or four years hence. In other words, demand a diploma of public health for and from the present possessors of these posts and there will be none to oust them. The creation of a special service will ensure stability of office.

In conclusion, I trust that nothing that I have said will have seemed to throw cold water upon the advance recently made in the establishment of the public health and marine hospital service. That was a great advance, and as an outsider I regard as its first feature the clause in the Act empowering yearly conferences between the Federal and State health officials provided always that those conferences be so conducted as to permit the freest interchange of opinion. The good spirit that has thus developed between the two bodies has already in Louisiana and elsewhere borne rich fruit. It is this advance, indeed, wise and timely, which permits that you in this country look forward to still greater progress, and, as I have said, that in my opinion is to be looked for along the lines here indicated of still further unification of Federal and State health authorities, and yet fuller recognition of the public health service as a distinct profession through the establishment of a diploma of public health.

RECENT WORK UPON TETANUS.

BY

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Notes of a case following vaccination; intraneural and high cord injection of antitoxin; death.

The history of experimental work with the toxine of tetanus is an extremely interesting one. Only within the last three or four years, however, have we come to very definite ideas concerning the exact action of tetano-toxine. This more exact knowledge we owe chiefly to the investigations of Marie and Morax in the Pasteur Institute in Paris, and of Meyer and Ransom in Marburg. Before going into detail in this direction it may prove of interest to review very briefly the history connected with our knowledge of the toxine of tetanus.

The bacillus itself was discovered by Nicolaier in 1884, but it was not until several years later (1890) that Kitasato was able to grow it in pure culture. It was found that the bacillus remained entirely at the seat of infection, where it manufactured the toxine,, which, through its absorption, was the immediate cause of the various phen-

omena of tetanus. In the early nineties an antitoxic serum was manufactured by Tizzoni and Cattani in Italy, and by von Behring in Germany.

It has been known from the time of Hippocrates that the toxine of tetanus affected chiefly the central nervous system, but it is only within the last few years that we have got clear light upon the path which the toxine takes in order to reach the nervous system. Gumprecht showed first with some degree of certainty that the toxine attacks the spinal cord in particular, and not the peripheral parts of the nervous system; and that all the functional phenomena of the disease, both the reflex-hyperexcitability and the tonic muscular contractions, depend on this cord poisoning. No one any longer maintains that the muscle itself is functionally influenced. Bruschettini in 1892 demonstrated the presence of the toxine in the central and peripheral nervous system after subcutaneous inoculation; neighbouring organs were free from it, except the blood. Brunner in 1894 suggested that in head tetanus the toxine travelled by the facial nerve, but he let the theory fall. Gumprecht decided for the validity of this theory, but believed that the toxine travelled only by the lymphatics of the nerve-sheath. Marie in 1897 expressed the same belief, but gave no proof. Thus up to the year 1901, or thereabouts, the prevailing theory of the action of the tetanus toxine upon the central nervous system was that the toxine being manufactured at the point of infection was carried by the lymphatics and by the blood to the spinal cord, where it was sucked up, so to speak, from the blood or the lymph by the ganglionic cells of the cord.

It was in this idea that the antitoxine was given subcutaneously or intravenously in full expectation that its anti-toxic power, so perfectly demonstrated in the test-tube, would also be valid in the human blood. We all know how this expectation has been in large part disappointed, and the explanation for this we now find in the experiments of Meyer and Ransom. These men, whose results were published in 1903, have demonstrated that the only path of transport for the toxine to the central nervous system is by the nerve. Thus:

1. *After subcutaneous inoculation of the toxine it can be demonstrated in the nerve.* In four rabbits in which they injected toxine into the hind leg, the toxine was found both in the blood and in the sciatic nerve of the injected leg, but not in the cord or the brain. It will be remembered that Bruschettini had already demonstrated its absence in other organs.

At this point it may be opportune to resume the conclusions to which Marie and Morax arrived as the result of experiments carried out simultaneously but published in the previous year, 1902. They found that

(a) the injection of a tenfold fatal dose in the leg muscles of guineapigs was followed by the finding of the toxine in the blood and in the sciatic nerve of the same side; occasionally, if they waited for the development of general tetanus, in the other sciatic also. The muscle and fat from the neighbourhood of the injection contained no toxine. (b) *The sucking up of the toxine by the nerve is bound up with the integrity of the axis cylinders.* Thus, if in animals the sciatic was cut high up, it was found that after six days, when degeneration of the axis cyinders was well developed, the nerve would take up no toxine. Therefore the nerve sheath, or the lymphatics of the nerve sheath, do not materially share in the absorption of the toxine. (c) Again, if the main nerve be cut before the injection of toxine into the muscles of the foot, one can find the toxine later only in the distal portion, not in the proximal; therefore *the toxine gets into the nerve, not by the neural capillaries, but by the bare axis-cylinder endings in the muscle.*. Even when all injury of nerves is avoided, as in injection into the *corpus vitreum* of the eye, the toxine can be found later in the sciatics and the brachials. The more concentrated the poison is at any spot the more of it is taken up by nearby nerve-endings. (d) *The poison travels only centripetally.* Thus a nerve already containing toxine from a previous injection, is cut and left *in situ.* It is found that the toxine soon disappears from the proximal end, which is protected by the division against the further inwandering of the toxine from the periphery; or, if the lumbar cord be injected, one finds toxine in the lumbar and dorsal cords, but not in the peripheral nerves. These were the experiments of Marie and Morax; the work of Meyer and Ransom not only confirmed these results, but brought our knowledge of the subject considerably further ahead, and gave it a strong practical application.

II. *The spinal centres can be protected from the toxine by blocking the afferent nerves with antitoxine.* (a) In local poisoning. Thus, a rabbit received the toxine in the right and left legs over the tibia subcutaneously; at the same time antitoxine was injected into the sciatic of the right leg. The latter remained perfectly free of tetanic stiffness, while the left became tetanic. On the third day the fore legs also became stiff and death occurred on the fifth day. It might be thought that the toxine had escaped outside the nerve, and being absorbed into the general circulation had caused death in that way. This difficulty was overcome in later experiments by sealing the injected nerve at the point of injection with collodion and embedding it in paraffin. The development of tetanus was still prevented, although in ten days the antitoxine disappeared from the nerve, after which the toxine, still being produced, was able to travel up and ultimately cause a light grade of tetanus. (b)

If the toxine be injected intravenously, the ordinary picture is that the animal becomes tetanic in the course of three or four days in all its limbs at once—general tetanus. That is, the toxine is travelling towards the cord along all the motor nerves, having been taken up by the motor nerve endings in the muscles generally. Even here one can prevent the development of the cord phenomena by blocking the nerves with antitoxine, provided one can find the right moment at which to inject the antitoxine. Thus a six-fold fatal dose was injected into the jugular vein of a cat. Six hours later both the crurals and the sciatics were injected with antitoxine. In one to two days tetanus developed everywhere save in the hind legs which remained free of tetanus till the death of the animal two and a half days after injection. This was not a paralysis of the hind legs due to the injection, for the cat pulled up its legs and sat on them, while the fore legs were in cramp-like contraction. Thus the conclusion is justified that the toxine reaches the central nervous system, not directly through the blood and lymph, but *only* by the axis cylinders of the nerves. If one blocks these in time the corresponding spinal ganglia remain free, at least until the toxine wanders in from other parts of the cord not protected.

III. *The ascent of the toxine in the cord can be prevented by cutting the cord.* The ordinary course of the disease in a cat which has received toxine into one sciatic nerve is that it develops first of all a local tetanus of that hind leg; then, as the toxine ascends, we get a tetanus of the trunk, then of the fore legs, then of the neck muscles, and finally death.

This picture can be entirely changed by cutting the lumbar cord and inserting paraffin between the two ends. In one cat toxine was injected into both sciatic nerves and antitoxine given at the same time subcutaneously to neutralise the possible outflow of toxine in the epineural lymphatics and so into the general system. In the cat in which the lumbar cord was cut the paralysed hind legs became strongly tetanic, showing constant jerking. The cat lived three weeks, during which time the rest of the body remained free of tetanus; death finally occurred from exhaustion with emaciation. At post-mortem nothing abnormal was found. In the control, where the lumbar cord was not cut, general tetanus developed as usual with death in 4½ days. Thus it is evident that the spread of the toxine is ascending and travels up the cord.

In correspondence with these facts we find that when toxine is injected into nerves we get much more acute and more severe consequences than when it is injected intravenously or subcutaneously, and that tetanus develops much quicker.

Their experiments concerning the incubation period are very interesting. When they exposed the lumbar cord and injected the toxine directly into it in laboratory animals, tetanus developed with extraordinary

rapidity; in these experiments it began in from two to four hours, while under ordinary circumstances, in which they injected the toxine into the hind legs, the incubation period was usually from two to three days. The conclusion is that the greatest part of the incubation period is used up in the transport of the toxine along the peripheral nerves from the nerve endings in the muscle to the sensitive cord centres. Confirmation of this is also found in the observation that the length of the peripheral nerve, varying as it does in different animals, seems to have a decided and direct influence upon the length of the incubation period. Thus in the mouse it is 8 to 12 hours; in guineapigs 13 to 18 hours; in rabbits 18 to 36 hours; in the cat 28 to 70 hours; in the dog 36 to 38 hours; in the mule 4 days, and in the horse 5 days.

It is a peculiar fact that in animals experimental tetanus is always shown first as a local tetanus, that limb being rendered stiff in which the toxine was injected. This has been said to occur very rarely in the human being, although such is not at all our experience at the Royal Victoria Hospital. The phenomenon is explained by Meyer and Ransom in this way, that the toxine, travelling as it does only by the nerves, reaches the spinal cord first in that segment which corresponds in nerve supply to the limb injected; only later, by the extension of the toxine up the cord and by the transport of the toxine along other nerves which have sucked it up from the circulating blood, does generalized tetanus develop. Certainly a large share of the toxine enters the lymphatics running in or near the nerves injected; yet this has no influence on the development of the local tetanus, because it can be rendered harmless by immunising the animal with antitoxine without the clinical picture of local tetanus being changed. Moreover, and this is the essential point, the normal period of incubation is never altered when the blood is flooded by antitoxine; therefore the antitoxine circulating in the lymph or blood has no effect upon the development of local tetanus, provided the toxine be injected into the nerve or cord.

If the toxine be injected underneath the dura, it does not affect directly the nervous tissue but must wander first into the lymph stream and so into the blood wherein it produces not a local but a general tetanus. This transport of the toxine exclusively along the axis cylinder suggests that there must be a current of protoplasm running constantly up the axis cylinder to its central cell, and that it is this current which carries the toxine.

It is well known that in the human the disease may develop without material pain, and that when pain does occur it is apparently due in the main to muscle fatigue. In other words there seems clinically to be no involvement of the sensory nerves of a neuralgic character. Meyer

and Ransom, however, found that one could produce in animals a tetanus which was not motor in type, but sensory; and to this they gave the name Tetanus Dolorosus. It appeared only when they injected toxine into the posterior root of any spinal nerve between the posterior ganglion and the cord itself; they could never cause it by injecting a mixed nerve. In other words, the posterior ganglion seemed to offer a definite barrier to the upward path of the toxine. This disease, Tetanus Dolorosus, was apparently characterized by enormously painful crises of lightning-like pain, felt in the sensory areas of distribution of the corresponding spinal segment, and brought on by the slightest touch, even by merely blowing upon the skin of the area involved. In many cases this dominated altogether the picture, and led to death from exhaustion before the ordinary motor symptoms had developed. Tetanus Dolorosus and motor tetanus are quite independent of each other, as shown by the fact that the symptoms develop separately in point of time. The injection of toxine into the blood, subcutaneously, or into the nerve trunk never causes Tetanus Dolorosus. It is probable that these quickly alternating crises of pain-fatigue and pain-recovery, have their seat in the cerebrum rather than the cord, because the reflex answer was always and exclusively a cerebral one, consisting in co-ordinated movements of defense; pure spinal cord reflexes were quite lacking. From these and other experiments, Meyer and Ransom arrived at the following conclusions:—

(1) The toxine travels to the cord only by the motor path; it never reaches the cord by the sensory nerves; (2) the pain apparatus of the cord is isolated from the motor, so that the poisoning of one does not spread to the other; (3) the effectual spread of the toxine in the nervous system cannot occur through its lymph paths but does so in the protoplasm of the neurone itself; for otherwise the occurrence of isolated sensory and motor poisonings, and also the fact that a fixed barrier is set by the posterior root ganglion to the advance of the toxine in the nerve, would be inexplicable, inasmuch as the lymphatics of the ganglion stand in free and open communication with the subarachnoid spaces and with the lymphatic spaces of the nerves. From the cerebrospinal fluid, or the blood, or the lymph, the poison never gets into the intact nerve cell substance. A further proof of this fact, to those interested, may be found in the work of Roux and Borrel[3], who by injecting toxine directly into the brain substance, produced a form of tetanus characterized largely by psychical symptoms, to which they gave the name of Cerebral Tetanus. Now this type never appeared if the toxine were simply injected under the cranial dura without lesion of the brain cortex. The authors remark, in passing, that this protection against

blood-carried toxines is not a general one, *e.g.*, ether, cocaine, strychnine, all attack the nerve cells from the blood; on the other hand this property is not confined to the toxine of tetanus; probably all colloid substances and many substances which diffuse with difficulty, have the same property; this they found to be true at least for Sodium Ferrocyanide.

It must be remembered that the pathognomonic signs of tetanus are two, on the one hand permanent tonic contraction of muscle, on the other, reflex hyperexcitability: the one resulting in tonic, the other in clonic spasms.

This spinal hyperexcitability is present in Tetanus Dolorosus, only it is masked by cerebral inhibition. If one cuts the cord in a case of Tetanus Dolorosus there appears jactation of the hind legs, more or less constant, with movements corresponding to those which the animal would have assumed in order to bite at the painful area. As long as the pain impulses were carried to the brain there was no agitation of the limbs; on the contrary the animal kept as quiet as possible to avoid the pain of irritation, and only displayed agitation when the paroxysm became too strong. The paths to the brain once cut, the energy originated by the pain stimuli unloaded itself vicariously in continuous movements broken only by short pauses of fatigue. This therefore would be the spinal equivalent of the cerebral reflexes which are controlled by the higher centres in the intact animal.

The toxine can travel both by sensory and vaso-motor nerves, but in the sensory nerves its further advance is barred by sensory ganglia. Two experiments in which the toxine was injected into the vagus showed a distinct and long continued slowing of the pulse, and the conclusion therefore is justified that the cardio-inhibitory centre is sensitive to the toxine; yet apparently in these experiments only mere traces of the toxine could have reached it, to judge from the slight results developed.

It is unlikely that the toxine influences vaso-motor nerves generally for in tetanus the blood pressure remains unaltered.

To recapitulate the whole question Meyer and Ransom give at length their theory of experimental tetanus toxaemia. At the point of inoculation the toxine is sucked up largely by the motor nerves, in all probability by their bared axis cylinder endings from the lymph spaces; and is by this path transported to the motor ganglia of the cord. These are at first only put into a condition of hyperexcitability, so that they are aroused by the stimuli which are continually streaming in from the sensory periphery, and which ordinarily remain latent so far as exciting motor action is concerned. These stimuli are now sufficient to cause a continuous discharge of energy much greater than the ordinary, suffi-

cient, indeed, to bring the muscle into contraction. First the extensors and flexors both become slowly and moderately tense; but gradually the extensors overcome the others and extend the leg fully,—the so-called extension cramp. Local tetanus is thus the expression and the consequence of the normal muscle tone, but so increased that it overcomes all central inhibition.

The pathological substratum is an irritation of the motor apparatus in the cord, and therefore it remains at first localised. The extra toxine is carried on in the fibres of the cord, at first by way of the direct association fibre through the anterior commissure to the motor apparatus of the other side causing tetanus of the corresponding limb. Only after some time and with a sufficient import of toxine does the latter take hold of the tactile apparatus of the reflex arc, the nearest associated part of the nervous system, producing reflex hyperexcitability. Thus it comes to general tetanus of the reflexes. A stimulation of the involved limb or its nerve root will cause an abnormally severe motor explosion, which can spread by ascending and descending collaterals to the reflex apparatus of the whole cord; and conversely, upon stimulation elsewhere, the transmitted wave causes a reflex jerk only in the hyperexcitable district. If the toxine spreads, both motor hyper-tonus and hyperexcitability spread also and we get stiffness of almost all voluntary muscles together with general reflex hyperexcitability.

Thus there are two separate processes going on in the cord. The first is a local motor poisoning resulting in local tetanic muscle spasms: the other, secondary, is local sensory poisoning, a reflex tetanus spreading from the poisoned neurone. If the toxine has entered by the blood route it circulates to all the motor nerve endings and by this path to the cord, and the mischief is of course not localised to one area of the cord but is diffuse. That tetanus may then break out at certain areas of predilection we know both from animal experimentation (in cats, for instance, the fore foot first), and from human clinical observation. In this connection it is interesting to speculate as to the reason why in the human the first sign is usually trismus. It may be suggested that it is a mere matter of the time involved for the toxine to travel by the nerves; the central ganglia first affected are those belonging to the shortest nerves; therefore the toxine spreading rapidly in the general circulation is taken up by the 5th, a short nerve, and reaches the 5th ganglia quicker than it does the spinal ganglia corresponding to a comparatively distant point of infection such as the hand or foot. Recent experiments however of Marie and Morax [2] tend to show that certain nerves, of which the 5th is one, seem to have an increased affinity for tetanus toxine over other motor nerves. This part of the subject is still largely speculative.

APPLICATION OF THESE PRINCIPLES TO THE ANTITOXINE QUESTION.

It may be seen how great an importance this experimental work has upon the question of the value of antitoxine injected subcutaneously or into the blood current. It is a well known fact that a fatal dose of toxine is usually not prevented by any amount of antitoxine, if the latter is not given, in the laboratory animals, till several hours after the injection of the toxine. This fact, together with the evidence that the peripheral nerves take up the toxine, suggested to Meyer and Ransom that the antitoxine does not follow the toxine in the nerves to the central nervous system, and therefore cannot protect the animal from toxine already absorbed by the nerves. Further, the time elapsing between the outbreak of tetanic symptoms and the contact of the toxine with the sensitive centre in the cord, a fact which was got at by direct inoculation of the toxine into the cord, was only two to four hours. Now antitoxine given even 20 hours before the expected tetanus outbreak is ineffectual, when the toxine is injected directly into nerves; therefore they concluded that the antitoxine does not reach the central nervous system even by way of the blood or lymph. Experiments showed that when the antitoxine in 2000-fold excess was given either before, during, or after the inoculation of toxine into the nerve, it did not materially interfere with the development of local tetanus.

In this connection the experiments of Roux and Borrel, in 1898, concerning the causation of cerebral tetanus in immunised animals, that is a tetanus caused by the injection of the toxine directly into the brain, showed that in these animals whose blood contained enormous quantities of anti-toxine, the latter was not present in the central nervous system and did not prevent the action of the toxine. In one experiment Meyer and Ransom took a very actively immunised rabbit and were able to kill it by the injection of toxine into the sciatic. In this experiment a 25-fold fatal dose of toxine subcutaneously produced no effect, but upon injecting a much smaller dose into the nerve general tetanus was caused in 12 to 16 hours; while the blood of the dying animal, on being tested, showed that two drops contained more antitoxine than would suffice to neutralise the fatal dose of toxine that had been given. Now it is evident that the toxine here was advancing slowly along the nerves in a diluted stream, and if antitoxine circulating in the blood stream could reach it at all, it would have been so reached and neutralized; therefore antitoxine injected subcutaneously or intravenously is never taken up from the blood or lymph by the substance of the nerve fibrils or the ganglionic cells. Even in an animal whose blood is antitoxic to the last degree, the neurones are free from antitoxine, that is unprotected. This again proves that the toxine in its transport along

the nerves cannot be carried by the lymphatics of the nerves, else it would be neutralised; therefore again the toxine must travel to the cord in the plasm of the axis cylinders. *That part only of the toxine which is circulating in the blood can be reached and rendered inert by antitoxine injected subcutaneously.*

All this agrees well with the clinical observation that the serum treatment of tetanus, usually given subsutaneously, has been extremely uncertain. That portion of toxine which after infection is already in the nerve substance or in the cord can no longer be overtaken by the antitoxine. An infection depending upon a certain amount of toxine already absorbed by nervous tissue will inevitably run its course, whether to spontaneous cure or to death. On the other hand toxine which is still in the tissue lymph or blood, or that coming steadily on from the focus of infection, can be neutralized by antitoxine, and the source of the toxine can be blocked, and in this way a toxaemia otherwise fatal can be arrested and the life of the patient saved. But we can go further and say that it is conceivable, that even in cases in which presumably a fatal dose of poison is already taken up by the nerves, but has not yet travelled as far as the vital centres of the cord, a fatal ending might be avoided by the injection of antitoxine into the nerve substance. As is known Roux and Borrel in this idea recommend intra-cerebral injections of antitoxine, and in animal experiments have had apparently favourable results. "Whether," Meyer and Ransome conclude, "it will be possible by the injection of antitoxine into the nerves, or in extreme cases into the spinal cord, to succeed in overcoming the toxine, we are not yet in a position to state upon the basis of sufficient convincing experiment. In one case at Marburg, in which serum in large amounts was given one-quarter hour after infection, a local apparently progressive tetanus broke out. Kuester injected serum into the nerve roots of the arm and the tetanic symptoms soon disappeared."

Upon this theory it is evident that in order to reach the toxine with the antitoxine we must bring the two into direct contact by injection into nervous tissue. In addition it is evident that the element of time is of enormous importance. The toxine travels along the nerve plasm towards the vital centres in the medulla; death usually occurs by the involvement of these centres; therefore we must block the advance of the toxine early before it has time to reach these centres. This necessity of early use of the serum has always been emphasized by von Behring.

The question as to the comparative mortality under the old expectant treatment and the serum treatment of the last decade is an interesting but difficult one. Authorities agree fairly well that under the old plan the mortality was from 80 to 90% in all cases. The statistics concerning

sero-therapy which have been published by von Behring, and more lately in the year 1900 by Moschkovitz, seem to show a mortality of only 40 to 50%. We cannot however accept unreservedly these figures. The statistics of serum therapy are drawn from collections of isolated cases. Now it is notorious that one usually publishes the striking cases, and in tetanus the striking case is the one that recovers; one is apt not to report the fatal cases. Therefore reports upon the advantages of the serum are certain to be much too favourable. Even before serum therapy this method gave a mortality of around 50%. Such results are irrational! What we need is large hospital statistics in which all cases, both favourable and unfavourable, are accurately set down. Until we have these we cannot come to a decided opinion upon the value of serum therapy. Nevertheless, the difference is so great that we may believe that probably antitoxine has some good effect. It is plain that according to the experimental work it must have a neutralizing effect upon the toxine which is circulating in the blood current, although it can have none upon that which is already fixed by nervous tissue. In this sense the *mot* of Marchand is justified, "that a man with tetanic symptoms is not beginning to have tetanus; he is beginning to die of tetanus."

During the years from 1898 to 1902 or 1903 Roux's intra-cerebral injections of antitoxine were widely practised. Statistics of this operation also are to hand, but of course are also unreliable. Schauffler[6] collected 233 cases treated in this way with a mortality of 58%. Although the procedure seems illogical in view of the ascending nature of the infection and its almost exclusive action upon the cord and medulla, yet it may be that these figures are of favourable import; because those cases in which one uses intra-cerebral injections are usually the severe ones. Moschkovitz has given us extensive statistics embracing all cases treated by serum up to the year 1900; and we find that of 200 cases in which the serum was given subcutaneously there was a mortality of only 40.33%; in the intracerebral cases, 48 in number, there was a mortality of 52%.

While of late years the distrust of antitoxine used to cure, has become strong, experience has accumulated to show its value when used to prevent. The Journal of the American Medical Association has for several years past devoted much of its space to Fourth of July tetanus, and has given figures which indicate the very marked prophylactic value of the antitoxin, so far as figures can indicate anything in a question of prophylaxis. There can be no doubt but that purely laboratory evidence is very strongly in favour of such a procedure.

It was natural that these experimental results should soon find a clinical response. The laboratory operation, proven effectual, of injecting antitoxin into the nerves leading from the focus of infection,

might justifiably be imitated upon the human. And in fact in the last two years a few cases are reported of intraneural and intramedullary injections of antitoxin. The cases are too few as yet to justify our basing any conclusion upon them; but I might briefly refer to an article by Rogers[4] in a late number of the *Jour. Amer. Med. Ass.* He, of those who have applied these laboratory principles to clinical cases, is the one who has gone farthest. In all his seven cases, he injected the serum subcutaneously, intravenously, intraneurally, and into the substance of the lumbar cord; but in three that were especially grave, he went further, and injected antitoxin into the substance of the lower cervical or upper dorsal cord, in the hope of preventing further ascent of the toxin towards the vital medullary centres. Of these three severe cases, one lived, and seemed to be saved by the procedure; another was greatly benefited, but relapsed and died, owing to a mistake whereby diphtheria antitoxin was given on the day following instead of antitetanic serum. The third died of what seemed to be an overwhelming infection. Of the remaining four, three lived and one died.

The case that I wish now to report occurred in the practice of Dr. Morrison, of Point St. Charles, was seen in consultation by Dr. Hamilton, who advised removal to hospital and asked me to take surgical charge of it. I am indebted to Dr. Hutchinson, the house surgeon in charge, and to Dr. Morrison, for notes.

Mary A., aged 5 yrs. Admitted Sept. 23, '05.

Present illness:—

On Aug. 30, '05, the patient was vaccinated, and everything went well until Sept. 18, '05, when the mother noticed a bad odour from the scab, which had a shield over it. She did not see a doctor about it until Sept. 20, '05, when he took it off and found a sloughing wound. About the 13th day the doctor had seen the arm; there was a hard scab with no evident suppuration underneath. The technique of vaccination had been thoroughly aseptic. For the first 4 or 5 days rubber protective was kept over the wound; following that, no dressing save a shield. After cleaning it thoroughly he gave the mother boracic dressings to apply; and this was done, she says, carefully. On Sept. 22, '05, in the morning the child complained of some stiffness in the left arm, and in the jaw while eating. This gradually increased, and by night the right side of the neck became stiff and slightly painful. She woke up screaming several times in the night and had apparently one convulsion. The condition became somewhat worse on Sept. 23, '05. Dr. Morrison was not called in till noon of the 23rd. He summoned Dr. Hamilton in consultation, who recommended her transference to hospital.

Admission, 5 p.m., Sept. 23, '05.

Condition:—

The patient is not suffering any pain when quiet, and lies with the head turned to the left and a little backward. She holds the left arm flexed and cries when attempts are made to extend it. The jaws are closed, and can only be opened wide enough to admit of half the tongue being protruded. Occasionally she has clonic contractions of the masseters. The right sterno--mastoid stands out somewhat rigid. The posterior neck muscles are also stiffened slightly and occasionally contract drawing the head back.

Sept. 23, '05. At 8 p.m., under chloroform, the ulcer was excised by an elliptical incision, and the wound closed with a rubber tube drain. Ten c.c. of antitetanic serum (P.D.) was injected into the subcutaneous tissue over the anterior part of the left shoulder.

9.15 p.m. General convulsion—opisthotonos.

9.30 p.m. Slight general convulsion. Chloral hydrate gr. v. q. 6 h.

Sept. 24, '05, 12 to 2 a.m. A number of slight spasms.

6.30 a.m. Slight general convulsion.

Up to 9.30 a.m. A few slight convulsions. One was observed carefully.

It was preceded by a cry—mouth tightly closed and remained so for 2 or 3 mins.— head retracted—limbs drawn up, and left arm became more spastic.

She complained of some occipital pain on the right side; probably due to the spasm of the right sterno-mastoid. As the condition was growing worse, she was put under chloroform at 11.15 a.m., and the left brachial plexus exposed; antitetanic serum, one drachm, was injected under the sheaths of the musculo-spiral, musculo-cutaneous, ulnar, and median at the junction of the two heads. Enough was injected to swell the nerve to three times its ordinary size. Silk ligatures were left on the nerves but not tied, for convenience of later injections. Intravenous of antitetanic serum, one drachm and a half, in right arm. Lumbar puncture between 2nd and 3rd; needle moved about in the intention to wound the cord, but did not cause spasm of the legs. Antitetanic serum, one drachm and a half, injected.

Subcutaneous injection over the shoulder, one drachm and a half.

Subcutaneous injection in abdomen, 10 c.c.

No improvement followed these procedures.

1 p.m. to 1.30 p.m. She had six convulsions, characterized by drawing up of the legs, especially the right, the left very little—flexing the arms—opisthotonos—clenching the teeth. Between the convulsions she can swallow.

1.30 p.m. to 4 p.m. The spasms occurred every few minutes but were not so severe and the left leg did not seem to take part in them. The right leg would flex and become markedly abducted, turning the patient onto her left side; at the same time there was marked opisthotonos. The abdomen was comparatively soft. The arm would extend at times and this was more marked in the right than the left. At times the "risus sardonicus" appeared.

4.30 p.m. Pulse very weak. Spasms becoming very frequent, q. 2-3 min. Sod. brom. and chloral aa gr. v. given, which seemed to quiet the child to a slight extent. About 5 p.m. the child suddenly seemed about to die; became almost pulseless; probably a cardiac spasm. This soon passed off, and the pulse recovered its former strength.

6 p.m. Ten c.c. of antitetanic serum was given in the subcutaneous tissue of the abdomen. Marked cyanosis had appeared.

9.20 p.m. Pulse and spasms worse. Cyanosis now marked. I now resolved with hesitation to inject antitoxine into the spinal cord high up after Rogers's example.

This was done at 10.30 p.m. between the 6th and 7th cervical vertebrae. The needle was advanced till it was stopped by the posterior aspect of the body of the vertebra; it was then withdrawn about $\frac{1}{4}$ to $\frac{1}{2}$ inch and a few drops injected, then it was pushed forward again to the vertebral body, and withdrawn $\frac{1}{4}$ in. to $\frac{1}{2}$ in. and about 45 minims of serum injected slowly, taking 9 or 10 min. in all for the injection. This seemed to influence in no way the cord physiologically. The remainder of the 10 c.c. injected into the subcutaneous tissues over the anterior aspect of the right shoulder. The spasms afterwards became less frequent but more severe, and cyanosis became quite marked.

Sept. 25, 1.20 a.m. Patient died. Condition as follows:—

The pulse gradually became weaker and more rapid. Cyanosis more marked—convulsions more severe and towards the end involved both legs. At 1.20 a.m. she had a very severe convulsion; then respiration ceased and the pulse became imperceptible at the wrist, but the heart continued to beat and was in delirium cordis. She then gave a couple of gasps and died. Appended is a synopsis of the chart:

Date and Hour	23rd 10	12	24th 4	8	12	4	6	8	11	25th 12
Temp.....	98.4	100	101	100.4	96.4	101.3	103.2	105	104.4	105
Pulse.....	130	138	158	?	142	—	180	180	188	190 ?
Resp.....	28	32	36	38	—	—	36	36	44	46

The duration of this case from first symptoms to death was thus only about 64 hours—a very grave, acute case. She came under treatment about 36 hours after the outbreak of symptoms. She received in all about

45 c.c. of antitoxin subcutaneously, 1½ drachms intravenously, 1½ drachms into the lumbar canal, with attempt to wound the cord; and 3 drachms into the brachial plexus; finally about 45 minims into the cervical cord. The effect of all this seemed to be *nil*. Undoubtedly the case was one of those acute ones which are doomed from the first, whose nerve cells have absorbed an amount of toxin which is bound to be fatal. Nevertheless, it must be admitted as a mistake, that the serum was not injected into the brachial plexus and the lumbar cord as well as intravenously and subcutaneously at the very first opportunity. To wait till the following forenoon was losing valuable time. Naturally, it must remain a question, how soon one is justified in injecting the serum into the cervical cord. Further animal experimentation is needed before one can feel justified in doing so without very grave need; and by that time, it will usually be too late.

The vaccine used in this case was in tubes, supplied by one of the best firms. Five tubes of the usual package of ten were used in vaccinnating five children. Of these, one was the sister of the patient, and was done at the same time. Two were inoculated three days previously, and the fifth a week later. Of the five, four "suppurated"; all took. The patient was the only one that showed any untoward symptom.

Those interested in vaccination tetanus may consult a comprehensive article by McFarland,[5] in the *Lancet*.

In conclusion, I wish to state my belief in the following principles:

1. Antitoxin is an efficient antidote when in contact with the toxin.

2. It must be brought into direct contact with the toxin in the nervous system of operative means. Therefore, tetanus is no longer a medical but a surgical disease.

3. The infection being an ascending one, we must block the nerves, the cord, and possibly also the lower neurones of the cerebrum by injections of antitoxin directly into these structures.

4. It must be admitted that in the case of cord injections this is partly a blind procedure, because we do not know how widely, or exactly where the antitoxin will diffuse once it is inserted, or to what extent it will come into contact with the toxin; but it is, on the other hand, a logical following of what light we have.

5. I would be inclined in cases which bid fair to be fatal to attack the nervous system from all sides—using the intracerebral as well as the intra-medullary and intra-neural injections. The dangers of such interference have been proved to be slight, and should not deter us, in view of the otherwise fatal nature of these cases.

6. It is of the utmost importance to inject *early* in any case which, in our judgment, is evolving acutely.

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SPIROCHÆTA PALLIDA.

BY

C. B. KEENAN, M.D.

It is with a great deal of pleasure and satisfaction that I find myself enabled this evening to show you two typical specimens of the much searched for Spirochæta pallida and also another specimen so closely resembling the former as to occasion a very natural confusion, namely, the Spirochæta refringens.

Of these two specimens of the Spirochæta pallida—one I have taken from a mucous patch, and one from a primary sore. Through the kindness of Prof. Starkey I have been able to compare these organisms with some prepared by Prof. Metchnikoff, and find them similar in morphology, but less deeply stained.

The discovery of the Spirochæta pallida must be credited to Schaudinn and Hoffmann,[1] who published the first article on the subject in the spring of 1905, and since then, they and numerous other investigators have added largely to what is known of the organism.

Schaudinn[2] has reviewed and compiled all such data, limited as they still are, and finds that the Spirochæta pallida can most easily be separated from similar forms by examination when alive, owing to its greater fineness, its more limited capacity for refracting light, and its characteristic form of spiral, which is composed of narrow, regular and deep windings — 10 to 26 in number, present even when the organism is immobile, while a similar spiral form, if present at all in other spirochæte, is visible only during movements of the organism.

This peculiar form of spiral still persists in the fixed preparation in which the organism is stained with difficulty, Giemsa's solution giving the best result and further aiding us in identifying the spirochæta pallida by staining it red whilst closely resembling forms take a blue tint.

Schaudinn now, in correction of his original statements finds that the organism ends in long tapering flagella, which at times may be double, and these tapering ends differentiate it from almost similar but bluntly ending spirochætes found in ulcerating carcinomata.

A nucleus and an undulatory membrane are said to be present, there-

(Read before the Montreal Medico-Chirurgical Society, 20th October, 1905.)

fore, the organism is to be placed among the Protoza, and Schaudinn feels justified in distinguishing it from the spirochæte, and classifying it as a spironema.

The spironema — to give it its new name — can be demonstrated in primary and secondary syphilitic lesions either in human beings or in artificially produced syphilis in monkeys. It is likewise to be found in blood taken from children dying from hereditary lues.

A few objections have been raised as to its pathogenicity, but its uniform occurrence in these sites which I have mentioned, goes far to prove it the causative agent of the disease.

In making smears great care must be taken to obtain material from the deep portions of the lesion and also not to confound it with an organism almost universally present — the Spirochæta refringens, which takes a stain more easily, and which is characterized by its greater thickness, and its windings which are broader, shallower and fewer in number.

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MYXŒDEMA IN THE MALE.

BY

F. G. Finley, M.D.

Cases of myxœdema in the male are decidedly rare. Of 150 cases collected by Prudden there were 32 men and 113 women. Heinzheimer found only 10 males and 117 females in 150 cases, the sex being omitted in 23. Hun and Prudden point out that the great majority of women who suffer from the disease have borne children, and only a small proportion are unmarried.

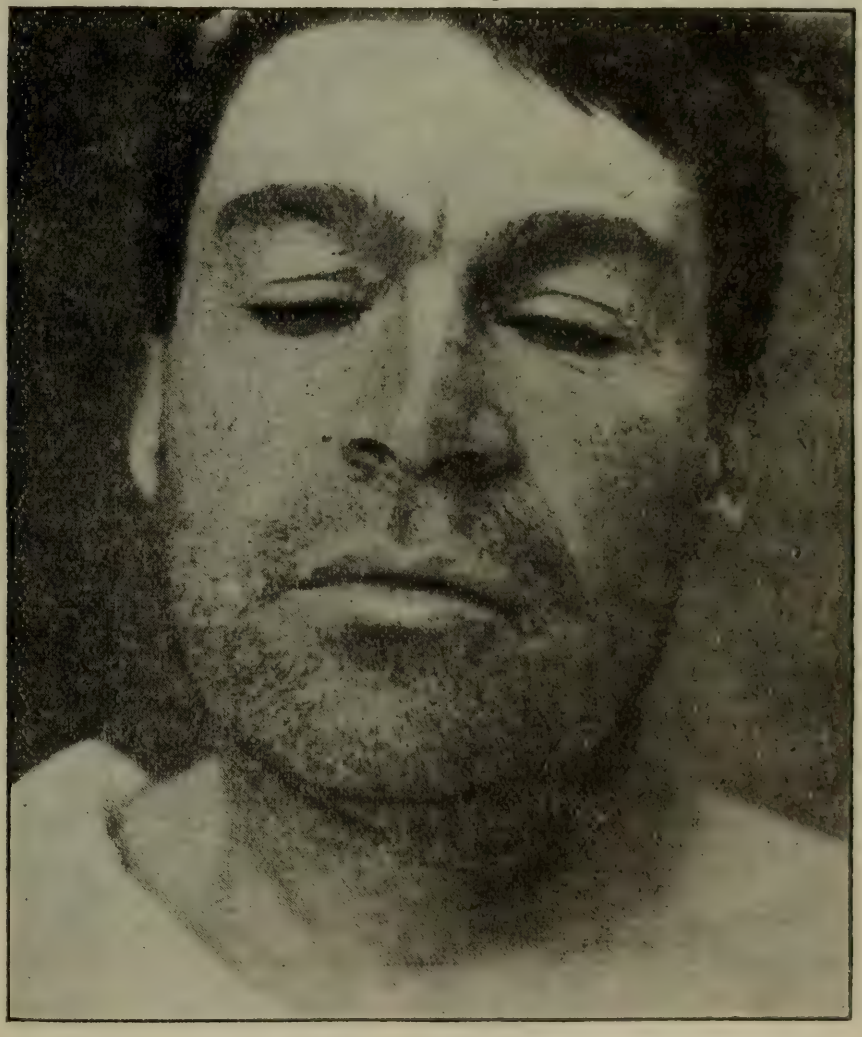
That there is a relationship between the thyroid gland and the occurrence of pregnancy is shown by the frequency with which the gland enlarges during this state. The great preponderance of the disease in the female sex, and particularly in married women, is probably due to subsequent atrophic changes in the gland.

Henry D., farm labourer, No. 871, 1904, was admitted to the Montreal General Hospital on November 5, 1904, complaining of diarrhœa, headache, weakness in the arms and legs, shortness of breath and swelling about the eyes.

In 1900 he first noticed swelling of the eye-lids, which has continued since. Two years later his hands became weak and he found it very difficult to perform his duty of milking cows, and a little later his legs

(Read before the Montreal Medico-Chirurgical Society, 20th October, 1905.)

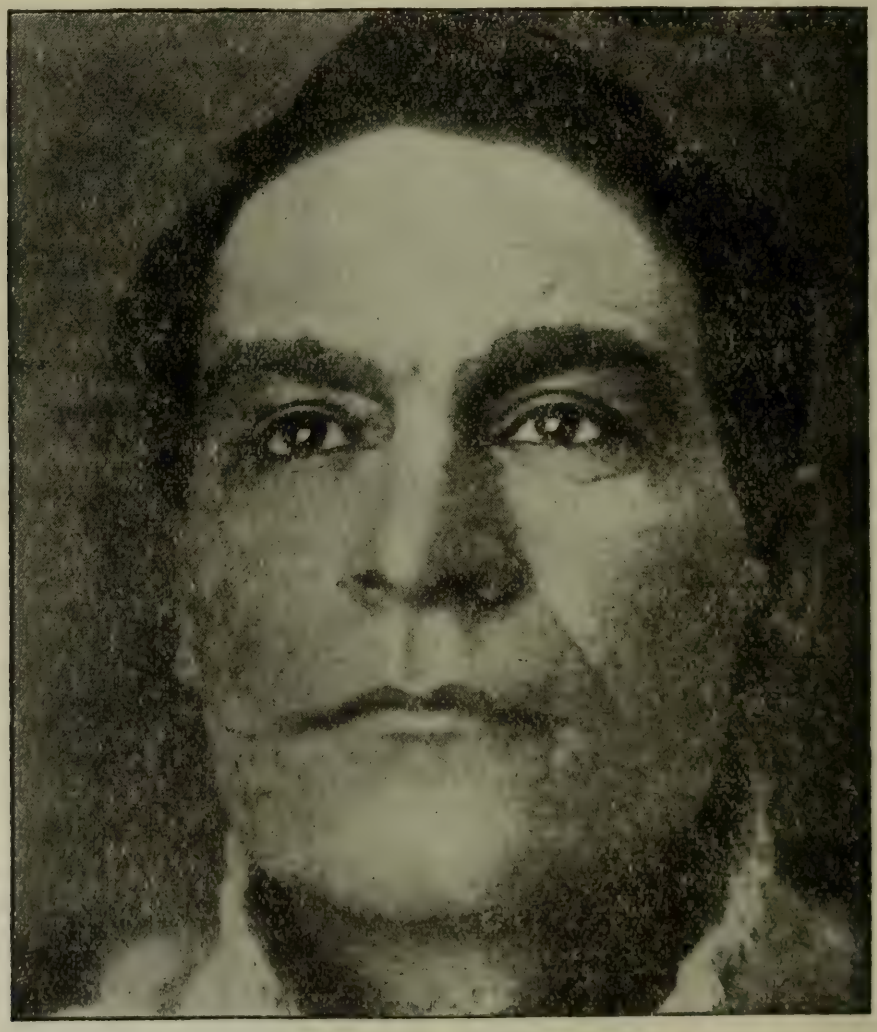
also became swollen and weak, so that he frequently tripped in walking. The symptoms were always aggravated by cold weather, and recently he has been quite unable to carry out any manual labour in cold weather, as the implements would slip out of his hands. Diarrhœa has been present for nine months, there being usually a very large loose stool daily, offensive in odour, and about the consistance of paint. His appetite has remained good. Shortness of breath has been noticed for a considerable time and has been increasing during the last few months.



Although he has kept at work he is very easily fatigued, and, owing to his incapacity for labour, has been discharged from one situation after another. The swelling has persisted in the eyes and legs.

Examination shows a fairly nourished man. In bed he lies huddled up on his side with the bedclothes drawn over his head, and when up he always sits close to the radiator. The skin is almost universally dry and harsh, there being only slight moisture in the axillæ. The skin is quite elastic, and the subcutaneous tissues are not thickened.

There is a considerable degree of œdema of the upper and lower lids. The skin of the face and neck is of a brownish tinge, and there is a slight flush over the malar bones. The folds of the alae nasi are fairly well marked, the lips, especially the upper one, are slightly thickened. The hair of the scalp is rather thin, black, coarse and somewhat bristly, and less elastic than normal. There are no pads in the supra clavicular regions. The fingers are thick and the hands rather broad. The



colour of the finger nails and mucous membrane shows a moderate grade of pallor, and the blood count, taken by Dr. Anderson on November 8, gives a red cell count of 4,370,000 Hg. 65%; white cells, 5,000 (a month later, a count by Dr. Gordon showed 4,040,000 r.b.c. 5,400 b.c. and 60 per cent Hg.).

The temperature during four days varied from 95 3-5 to 99, and the pulse from 48 to 72, being almost always below 60. No glands are felt, and the thyroid is not even palpable.

He walks with the head a little forward and rather heavily. The

muscles are well developed, but his grasp and the power of the muscles of his legs is somewhat impaired. The speech is distinct, but the voice harsh and leathery in quality, and the tongues is large. He is quiet and speaks very little, and sleeps a great part of the time. The knee jerks are increased, the plantar reflexes present, but slight, no ankle clonus or Babinski. The urine never shows any departure from the normal.

On November 13th he was given Thyroid extract gr. ii t.i.d., and four days later the note reads "seems less drowsy, has had several profuse sweats, more talkative and looks brighter."

Nov. 18. The skin is moist all over, he is brighter, and the pulse varies from 60 to 84.

Nov. 23. The tongue is smaller, the voice clearer, the eyes brighter and the œdema of the lids is much less; temperature 96 to 98 2-5; pulse 64 to 84.

Nov. 29. On the 28th thyroid was increased to gr. iv. t.i.d. He is much brighter and not so susceptible to cold.

Dec. 6. For the past week, taking thyroid gr. v. t.i.d. There is no œdema of the face and the hands are much smaller. The skin is soft and moist and he is not so sensitive to cold. He is much brighter and does not sleep so much.

He remained in hospital till March. About the last symptom to disappear was the sensitiveness to cold, which he used to complain of as felt chiefly in the testicles. He was discharged well, and warned to continue the thyroid treatment.

When seen a few weeks ago he appeared perfectly well and healthy, able to work, and continuing to take the thyroid extract. The diarrhœa was controlled by an astringent mixture.

A perusal of the history of this case shows a fairly typical case of myxœdema.

The condition of the skin, the œdema of the lids and the thickening of the features and hands, the mental dullness and drowsiness, the harsh voice, the slow pulse, the thickened tongue, and the extreme sensitiveness to cold, which always caused an excerbation of the symptoms, are all very characteristic of the disease.

Anæmia is commonly present; Ewald states that the red cells are usually three to four millions, the hæmoglobin from 40 to 60 per cent., and that the white cells are occasionally increased.

The muscular weakness which was such a prominent feature of this case is probably to be attributed to infiltration of the muscles by mucinoid material. Scholz, quoted by Ewald, states that there is hyperplasia and hypertrophy in these structures, as well as a mucinoid and œdematous infiltration.

The weight changed comparatively little, varying between 145 lbs. on admission to between 147 and 140. On exit he weighed 142, and when first put on treatment lost a couple of pounds.

The pallor and swelling of the lids in myxœdema is somewhat suggestive of Bright's disease. As albuminuria is present in one-sixth of the cases, confusion may occasionally result to anyone unfamiliar with the leading characteristics of the disease.

The photographs illustrate the appearance before and after treatment.

PARANEPHRIC CYST SIMULATING FLOATING KIDNEY.

BY

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Surgeon to the Montreal General Hospital, Assistant-Professor of Surgery and Lecturer on Clinical Surgery, McGill University, Montreal.

Paranephric cysts, especially of some of the remains of the Wolffian body, are sufficiently rare, I think, to warrant the publication of the following case:—

Miss A. B., aged 30, was referred to me by Dr. Roddick. The history was that six years ago she began to have pain in the right side of the abdomen, accompanied by nausea and vomiting. These attacks would last for a few hours and were relieved by rest in bed. The attacks gradually subsided until two years ago when they again came on, and during the winter she had five or six very like the previous ones. Some time during this period she accidentally discovered a movable tumour in the right upper quadrant of the abdomen, which produced a sensation of faintness upon pressure. At times this tumour could not be palpated by the patient.

During the following winter she had several attacks which were diagnosed as appendicitis, and she was put to bed, with ice bags applied in the region of the appendix, for two weeks at one time. As a result she was practically confined to bed from December until March. There was severe pain in the lumbar region, more especially on the right side, during the last month that she was in bed. Upon getting up this pain was worse, especially on attempting to straighten the back. Convalescence was slow, and during the summer holidays she had frequent attacks of pain in the right side, always accompanied by nausea, and sometimes leading to actual vomiting. She became gradually worse until November when she took to bed. Any attempt at getting out of bed reproduced the pain with its concomitant symptoms, and now following these attacks of pain she would feel very drowsy and sleepy, one time sleeping for the greater part of two weeks, taking very little nourishment and losing a good deal of flesh.

By this time the tumour spoken of previously had become noticeably

(Read before the Montreal Medico-Chirurgical Society, November 3rd, 1905.)

larger, more easily palpable and movable. Diagnosis was made of floating kidney, and it was resolved to see what postural treatment might do for her. For six weeks she remained absolutely in bed with the foot of the bed raised and a pad worn over the right upper quadrant of the abdomen. While lying thus she was free from pain, but if she turned on the right side, or sat up, the same old pain returned worse than ever. An examination now showed that this kidney tumour, as it was thought to be, was as freely movable and palpable as ever, and it was determined that the proper treatment would be nephropexy, which it was hoped would relieve the symptoms and effect a permanent cure.

The following are the notes of her condition on admission to the General Hospital:—"Slightly anæmic, but fairly well nourished; thoracic organs normal. As a result of palio-myelitis in childhood, the legs are weak and she has to use crutches. A slight fullness was noticed on the right side of the abdomen on a line with the umbilicus and also extending up to the right hypochondriac region. Abdomen not distended. Palpation shows here a tumour, shape and size that of a kidney, easily mapped out, moving freely with respiration and movable into the different quadrants of the abdomen; not very tender, even on deep pressure, though a sensation of nausea is produced by this. Bowel note tympanitic over it. It readily slips back up into the right loin behind. There is no tenderness over McBurney's point, and nothing pointing to appendicitis. Urinalysis shows practically normal urine. The sigmoid flexure of the colon is distended with fæces. Diagnosis: Floating right kidney."

After the usual preparation the operation for nephropexy was done. Edebohls' vertical incision being the one used. Cutting through the perinephric fat a cystic tumour was reached, which was thought to be the right kidney. The cyst was about the size and shape of a kidney, with thin walls, fixed by weak adhesions which were easily separated without ligature. It was with considerable difficulty delivered on the back and enucleated from the remaining perinephric adhesions, which were elongated into a pedicle. This allowed it to move freely about in the abdominal cavity. It was, of course, entirely retroperitoneal.

After removing the cyst, further examination of the cavity showed that the right kidney was lying in the normal position, well up under shelter of the ribs, and it was not movable and apparently never had been; it felt seemingly normal. The wound was closed in the usual way, an intermuscular drain being inserted as oozing was rather profuse. The patient had an uninterrupted recovery, the wound healing by primary union, and since then the patient has had absolutely no return of her former symptoms and is in normal health.

Pathologist's report:—"Cyst from retroperitoneal region; 10 x 7 x 5 in.; divided into three loculi which communicate with each other. Sac itself consists of fine fibrous connective tissue over which course a few blood vessels. It contains thin, straw-coloured fluid, rich in albumin, containing definite traces of urea. A congenital cyst, probably in connection with the Wolffian body."

The presence of urea in the cyst in this position and bearing the relation it did to the kidney, makes this opinion fairly conclusive.

The case is interesting not only from the fact that here, as in the parovarium, it is possible to get cystic degeneration of these fœtal structures, which may grow and increase to such a size as to simulate other pathological conditions. As they increase in size, by tension on their fibrous adhesions, a pedicle is formed, and it would appear that these cysts, if the pedicle becomes twisted, are capable of giving much the same set of symptoms as those usually described under the caption of "Dietel's Crisis," with which we are so familiar in cases of movable kidney. In a former paper* we have noticed that these tumours by their mobility may mechanically induce other troubles; and in this case this happened to such an extent as to lead to a diagnosis of, and treatment for, appendicitis.

The literature of these paranephric cysts, if one excludes cysts of the suprarenal gland (which are fairly common), is rather scanty. Morris, in his "Surgical Diseases of the Kidney and Ureter," Vol. 2, p. 40, gives, possibly, the best account of them; and on p. 15 of the same volume he states how difficult it is to distinguish clinically between these tumours and true tumours of the kidney. He further says that less attention has been paid to these tumours by surgeons, and in surgical literature, than by pathologists. His contention is that the retroperitoneal remains of the Wolffian body, in the neighbourhood of the kidney, are undoubtedly accountable for certain paranephric tumours, and he cites certain cases which show the analogy between cystic degeneration here and that which takes place in the organ of Rosenmüller, which gives the much better known Parovarian Cyst.

MESENTERIC CYST WITH ACUTE INTESTINAL OBSTRUCTION.

BY

MURRAY MACLAREN, M.D., St. John, N.B.

The condition of acute intestinal obstruction may be produced by numerous causes varying in their frequency. One of the rarer causes, which I will have occasion to refer to in this report, is that of Mesen-

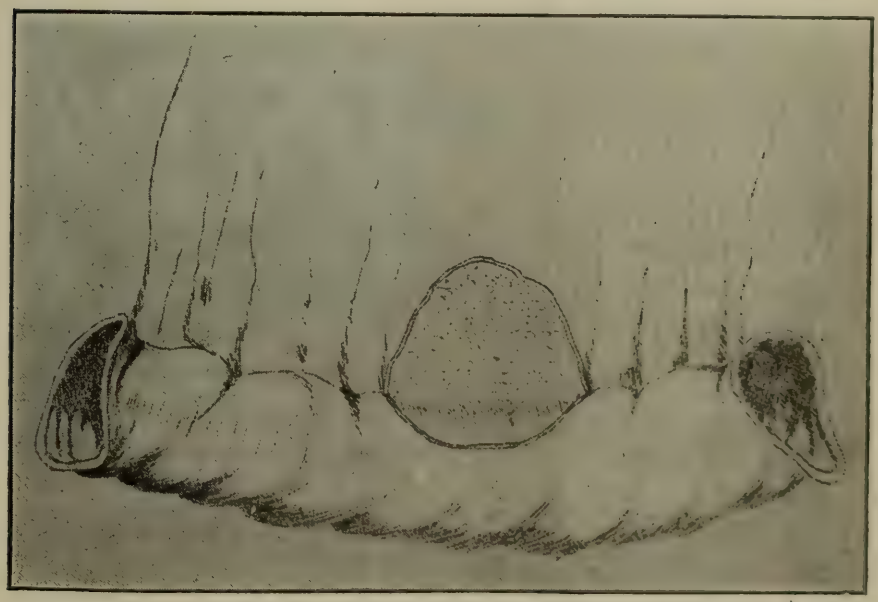
(Read before the Canadian Medical Association at Halifax, August, 1905.)

* MONTREAL MEDICAL JOURNAL, May, 1904.

teric Cyst. This is naturally an unusual cause, for mesenteric cyst itself is a somewhat rare condition.

The subject of the mesenteric cyst was J. J., a man 65 years of age. Two years previously he had had some form of painful abdominal attack lasting for a few hours, otherwise he had been quite healthy.

On the 25th July, 1903, he had abdominal discomfort and was un-



able to pass flatus or fæces. Purgatives and enemata were given without result, and vomiting supervened. The vomiting became frequent and fæcal in character, and the case was referred to me on the 28th July, three days from the first symptoms, by Dr. G. G. Corbet, as one of acute intestinal obstruction.

On admission to the hospital the patient was given an enema without

effect. His condition was as follows: He was collapsed, his temperature was 97 F., pulse 80, respiration 20, urine normal. The abdomen was painful and moderately distended.

No hernia nor abdominal tumour was found. A rectal examination showed a fullness anteriorly, the prominence of the prostate however was subsequently found to be partly occasioned by the pressure of a cyst impacted in the pelvis. The cause of the intestinal obstruction was quite indefinite.

Laparotomy was immediately performed by a median incision below the umbilicus. Coils of small intestine, distended and reddened, presented at the incision, and there was a moderate amount of ascitic fluid.

The cæcum was collapsed and on following the small intestine upwards for about eight or ten feet it was found dipping abruptly into the pelvis. Here a fluctuating tumour was felt. Upon elevating the small intestine, the tumour was induced to rise with it out of the pelvis, and was brought out of the incision giving a sensation very similar to that experienced when lifting out a small ovarian cyst.

The cyst had for its base the upper surface of the mesentery and a quarter of the circumference of the adjoining small intestine. It was removed by enucleation without difficulty and without hæmorrhage, and the peritoneum was brought together over the bared area with catgut and the abdominal incision was closed.

The progress of the case was satisfactory and uneventful, the obstructive symptoms being relieved and recovery taking place without discomfort, so that the patient was able to return to his home in three weeks.

The cyst was rather less in size than the fist. By falling into the pelvis it produced obstruction in two ways: From its attachment to the upper and anterior surface of the mesentery, when it descended into the pelvis it produced a horizontal rotation of the loop of small intestine from before backwards — there was clearly partial volvulus; and, secondly, the cyst from its displacement into the pelvis dragged well upon the loop of intestine. The obstruction was caused therefore by both volvulus and traction.

The cyst was yellowish in colour, smooth, lobular and fluctuating. It had a certain resemblance to a fatty tumour. The contents were fluid and yellow, and microscopically showed *debris*, but no fat cells. On removal of the yellow fluid the cyst wall was found to be thin and white, lobulated and sacculated.

Dr. G. A. B. Addy, pathologist to the General Public Hospital, St. John, has kindly examined the cyst, and states that the cyst wall is made up of a somewhat cellular and highly vascular connective tissue.

There is no basement membrane and no evidence of epithelium or non-striped muscular fibre.

Mesenteric cysts have been variously classified. Hahn, in 1887, described them as blood cysts, chylous cysts, serous cysts and echinococcus cysts. Moynihan's classification is somewhat similar: serous, chyle, hydatid, blood, dermoid and malignant cysts.

Braquehaye's division is sanguineous, lymphatic, hydatids, dermoids and cysts of adjoining organs, such as ovarian, parovarian and pancreas.

Dowd has carefully investigated the origin and nature of mesenteric cysts and groups them in three classes:—(1) Embryonic cysts, including dermoid, chylous and serous cysts; (2) hydatid; and (3) cystic malignant disease. He regards the chylous cyst as a cyst of embryonic origin, a pre-existing cyst into which an effusion of chyle has taken place. The serous cyst he also considers as probably embryonic. These views cannot be considered, however, at present, as established.

The cyst which is here shown may be placed under the group of serous cysts. The fluid was yellow and free from fat globules, it therefore had not the chylous characteristics.

It had as well, according to Dowd, a further characteristic, as he states that "most of the serous cysts occur in the omentum, intestinal edge of the mesentery mesocolon or retroperitoneal region, while the cysts which occur in the mesentery, excepting at the intestinal border, usually contain chyle.

I am indebted to Dr. W. L. Ellis for two sketches which have been excellently done. One shows the appearance of the cyst before removal and the other, the base of attachment after enucleation.

The clinical symptoms of mesenteric cyst are variable according to size, position and consistence of tumour.

These cysts have been diagnosed as ovarian cysts, floating kidney intersusception, intestinal obstructions and other conditions.

Vomiting, constipation, meteorism and pain are not infrequently present, and Nothnagel refers to those symptoms as having imitated on several occasions intestinal obstruction. I do not find any record, however, of complete obstruction due to the presence of mesenteric cyst.

Hochenegg believes with good reason that the attacks of pain are due to the displacement of the tumour, and consequent kinking or twisting of the bowel.

It is worth mentioning, according to Nothnagel, that the majority of mesenteric cysts are situated well to the right of and a little below the umbilicus, corresponding to the most common situation of the cysts in the mesentery of the small intestine. This was very probably the position of the cyst referred to before its displacement into the pelvis.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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Remittances advertisements or business communications are to be addressed to the Montreal Medical Journal Co., Box 273 ; all others to the Managing Editor, 216 Peel Street, Montreal. All communications intended for insertion in this Journal are received with the understanding that hey are contributed exclusively to this Journal. A limited number of reprints of articles will be urnished to authors at cost price, if a request to that effect accompany the manuscript.

VOL. XXXIV. DECEMBER, 1905. NO. 12.

INSANITY AND POLITICS.

Dr. Charles E. Hickey has been appointed Superintendent of the Asylum for the Insane at Cobourg. Dr. Hickey is well qualified for the post, according to the standard prevalent amongst the politicians of Ontario. The *Toronto News* sets forth his qualifications with enthusiasm. He was elected to represent Dundas county in the Dominion House in 1882, and again in 1887. In 1891 he was appointed superintendent of the Williamsburg Canals, a position which he held until 1897. He was Inspector of Schools for Winchester township for two years, and an examiner of common school teachers for Dundas county for two years. He has been, for some time, the chairman of the Morrisburg Board of Education. He has also taken quite an interest in fraternal societies, and is a Past Master of Excelsior Lodge A. F. & A. M., and a Past Grand of Zeta Lodge, I. O. O. F.

If now we were informed what community of interest there is between a canal, a seat in the Dominion House, a school board, a fraternal soci-

ety, and an Asylum for the Insane, our information would be complete. We are not blind to the manysidedness of a character which shines in so various environments, yet we cannot regard with complacency the conclusion that these are the best *milieu* for the evolution of a superintendent of an asylum.

It is quite true that Dr. Hickey graduated from McGill near forty years ago, and we are not disposed to regard that qualification too lightly. Yet, considerable progress in the care of the insane has been made since that time, and Dr. Hickey should not lay too much stress upon his remembrance of those early lectures in psychiatry. The discharge of his multifarious duties as politician and legislator, as superintendent of the Williamsburg Canal, as inspector and examiner of schools, as Past Master of Excelsior Lodge, as Past Grand of Zeta Lodge, cannot have left much time for searching to the bottom of the profound subject of psychiatry. We put forward this opinion not as a dogma or an oracle, but with a full apprehension of the fallibility of all human judgment. At any rate, if Dr. Hickey is qualified for his post, such a miracle must be extremely rare.

Dr. Edward Ryan has been appointed to the Kingston Asylum in place of Dr. C. K. Clarke, who was transferred to Toronto. We are given to understand by *The Practitioner* that Dr. Clarke was brought in owing to the impossibility of deciding between all the local political aspirants for the place. Dr. Ryan is President of the Kingston Conservative Association, and contested an election in 1902 without success.

Dr. Joseph John Williams has been made Superintendent of the Asylum for Epileptics at Woodstock. He is also without especial experience, apart from that acquired as "one of the best supporters of the Conservative party during the last three or four elections."

The President of the Medico-Psychological Association in his last annual address did not attach any great importance to political experience as a qualification for superintendent of an asylum. Indeed, Dr. Burgess, upon that occasion, contended that the principle was wrong, that it was a flagrant injustice to the public and to the profession, for an untrained man to be appointed to such a place.

PROPRIETARY PREPARATIONS.

We have received from the Etna Chemical Co. a letter enclosing copy of a communication from their solicitor to the Editor of the *Journal* of the American Medical Association, of which the following is an extract: "On behalf of the Etna Chemical Company, proprietors and manufacturers of 'Phenalgin,' I write to call your attention to an article by Dr. Frank Billings, entitled 'The Secret Nostrum Evil,' read before

the American Medical Association at its last meeting, at Portland, Oregon, referring to the said preparation 'Phenalgin' in a manner indicating that it was a quack remedy, and improper to be prescribed by physicians. The publication in your journal of such reference to 'Phenalgin,' I have advised my client would be libellous and not privileged."

We take pleasure in conveying this warning to our contemporaries against the publication of the article in question, as the Etna Company informs us that, "they understand that it is being sent out to a number of medical journals." We protest that, the article has not reached us, that we shall not publish it; yet we cannot refrain from saying that we should be disposed to place some reliance upon any judgment which Dr. Frank Billings might give upon a subject connected with medicine.

SUPERSTITION IN MEDICINE.

We have been favoured with several extracts from a forthcoming book entitled "Superstition in Medicine," by Dr. Hugo Magnus. If they were intended to create a favourable impression they have failed in their effect. We do not conclude from such evidence as is offered that the author is a man of sober and judicious mind. One-third of the extracts is made up of a quotation from "Dr. Salinger"— a name which up to the present was unfamiliar; and it deals with "Christian Science, an ancient delusion." The auhor quoted declares that "stupidity has at all times been a power superior to all the influences of culture and learning." Upon this head we take the liberty of contradicting him. He regards Christian Science as an example of those "extremes to which the sentiment of fanatical religion may lead men so soon as they shake off the steadying influence of physico-mechanical ideas in their theory of life." The author is free to propagate this doctrine of his, but he will not increase his following by railing at the beliefs of his fellow-men. Such terms as — absurd farrago — pitch of folly — confused and preposterous theories—the Eddy woman—are not fit for the mouth of a philosopher who seeks to destroy a belief which, according to his own showing prevails in "the best class of society," and according to their showing has proved to be a solace for their sorrow and an assuagement of their pain. We take the further liberty of informing those two authors, that there are yet, even in the medical profession, some perfectly sensible persons who believe in the efficacy of prayer. To such persons this book must be offensive; and also to those who are tolerant of any belief in which a fellow-man finds comfort. Scientific opinion is against the fool who declares: "there is no God."

MEDICAL PROGRESS IN TORONTO.

The most remarkable fact in connexion with Medical Education in Canada is the activity of the profession in Toronto. The movement began with the amalgamation of Trinity with The University; it extended to the hospitals, and will be further increased by the meeting of the British Medical Association in 1906.

Most persons are agreed that one efficient medical school is enough for a city; and, right or wrong, that question has been settled so far as Toronto is concerned. The school begins the session with 600 students, of whom 160 are in the first year. The faculty is becoming consolidated; and, under the wise direction of the Dean, Dr. R. A. Reeve, it may be trusted to deal efficiently with the problems which continually arise in a school of the first class.

The activity in hospital circles is no less remarkable. A fund of $977,000 has been accumulated, and it is expected that it will be increased to a million and a half of dollars. This will in time provide hospital facilities adequate for the school, and remove an element of weakness which now exists.

All this activity will reach a climax at the meeting of the British Medical Association next year. The arrangements, we understand, are well forward, and we in common with the whole profession in Canada feel assured that the high standard of excellence, which was set in Montreal in 1897, will be equalled if not surpassed.

THE ALEXANDER MEMORIAL.

Charles Alexander was a good man. There is nothing by which the public mind is so easily led captive as by goodness. Therefore the response was instant to the proposal that some public recognition of his life should be made. After much discussion it was agreed that this memorial should be associated with the work of the Montreal General Hospital, which does in a corporate way what Charles Alexander was always doing—ministering to the poor and afflicted.

The form which this memorial will take has not finally been decided, but the main idea is embodied in the heading of the subscription lists: "We, the undersigned, hereby subscribe to the Alexander Memorial Fund, to be devoted to the work of the Montreal General Hospital in such way, or ways, as the Board of Management, in conference with the Citizens' Committee, and the subscribers, may determine as best calculated to form a permanent memorial to Charles Alexander; it being understood that the subscribers to this fund shall enjoy voting power in respect to the form of memorial in proportion to their subscriptions."

At a meeting of the Citizens Committee a strong committee was ap-

pointed, which stands to-day as follows: Hon. Sir George A. Drummond, Hon. Sir Alexander Lacoste, Sir Melbourne Tait, Sir William Macdonald, Sir Montagu Allan, W. I. Gear, F. W. Mathewson, The Rt Rev. Bishop Carmichael, Rev. Dr. Barclay, Rev. Edgar Hill, Rev. Hugh Pedley, E. S. Clouston, Peter Lyall, John Torrance, James Williamson, George E. Drummond, James Crathern, H. Stikeman, J. Reid Wilson, David Morrice, S. H. Ewing, Abner Kingman, A. W. Hooper, F. W Evans, Hugh Graham, H. Laporte, C. R. Hosmer, Jas. Ross, Robert Reford, Hon. A. Desjardins, Hon. J. P. B. Casgrain, Hon. R. Mackay. Hon. R. Dandurand, John R. Dougall, Richard White, J. S. Brierley. F. W. Thompson, Herbert B. Ames, Herbert Holt, Senator Forget, Senator Beique, Sir Wm. Hingston, A. Baumgarten, Mortimer Davis, Rev. Rabbi de Sola, Mark Workman, R. Wilson-Smith, H. A. A. Brault

At this meeting Mr. James Crathern, the president, said that the necessity for a new wing for the hospital was imperative, but he pointed out the need for extra endowment for any enlarged premises, as the existing fund had been impaired to the extent of $80,000.

As explaining the present situation of the hospital we cannot do better than to reproduce the remarks of Mr. Hugh Graham, the chairman of the finance committee of the fund:

"No ordinary man can adequately present the claims of the Montreal General Hospital, or do justice to the sweetly beautiful character of the late Mr. Alexander. I have no hesitation in saying that the public as a whole, have failed in appreciation of the work done and being done by the Montreal General Hospital.

"Probably through lack of knowledge the great bulk of the subscribers to the hospital are giving exactly the same yearly subscription they gave twenty, twenty-five, thirty years ago. In the meantime the cost of maintenance of an hospital has increased at about the same rate as has the cost of maintenance of our private home and business establishments, with the result that the management of the hospital has to resort to all sort of spasmodic appeals for help, and notwithstanding this the running expenses have impaired the endowment fund by $80,000 in ten years. This is surely a reproach and should not be permitted to continue in a populous, prosperous, and I might say, wealthy community, like Montreal.

"In my humble opinion the friends of the hospital would do well to ponder most thoughtfully over this alarming condition of affairs, because, I venture to say that not in our time, not during the lives of those in this room may such an opportunity present itself as the present. But I repeat that to do the work we must have exceptional generosity on the part of those who know the needs and are able to supply them.

As a rule, the small subscriptions are usually the largest in a relative sense because they come from those who are not wealthy, but all the small subscriptions you can get from this to doomsday will not do for the Montreal General Hospital what the city of Montreal should do for it if it would escape the odium of being unappreciative of the great popular charity of all Canada. I may tell those who do not know it that recently there was initiated a new endowment fund for the General Hospital and considerable progress had been made with it, when Mr. Alexander died. It is now intended to turn that endowment fund into the 'Alexander Memorial Fund,' provided, of course, the people of Montreal rise to the opportunity to put the General Hospital in the position it should be in and to suitably perpetuate the name of the philanthropist whose whole life was a life of charity, the commemorating of whose name ought to be an incentive to good works in the generations that follow us."

We acknowledge again the receipt of the Visiting List for 1906, issued by Messrs. Wood, of the *Medical Record*, and also of that prepared by Messrs. Blakiston's Son & Company.

We are asked to announce that the Canadian Medical Association will meet in Toronto on the Monday afternoon and Tuesday morning preceding the meeting of the British Medical Association.

BRITISH MEDICAL ASSOCIATION.

The 74th annual meeting of the British Medical Association will be held at Toronto, Canada, on Tuesday, Wednesday, Thursday, Friday and Saturday, August 21st, 22nd, 23rd, 24th and 25th, 1906.

President—George Cooper Franklin, F.R.C.S., Eng., L.R.C.P., Lond., Surgeon, Leicester Infirmary, Leicester.

President-elect—Richard Andrews Reeve, B.A., M.D., LL.D., Dean of University of Toronto Faculty of Medicine.

Chairman of Council—Henry Wm. Langley Browne, M.D., Ch.B., F.R.C.S.E., Consulting Surgeon, West Bromwich District Hospital.

Treasurer—Hy. Radcliffe Crocker, M.D., F.R.C.P., Physician Skin Department, University College Hospital, London.

An Address in Medicine will be delivered by James Barr, M.D., F.R.C.P., F.R.S.E.

An Address in Surgery will be delivered by Sir Victor Horsley, F.R.C.S., F.R.S.

An Address in Obstetrics will also be delivered.

The Scientific Business of the Meeting will be conducted in twelve sections, as follows, namely:—

Anatomy and Physiology.—President—Professor Bertram Coghill Alan Windle, M.D., F.R.S., Cork. *Vice-Presidents*—Dr. A. B. Macallum, Toronto; Dr. Alex. Primrose, Toronto; Dr. T. Wesley Mills, Montreal; William Frederick Haslam, F.R.C.S., Birmingham. *Hon. Secretaries*—Dr. C. B. Shuttleworth, Toronto; Dr. Gawnshaw Cleland, Toronto; William Barnet Warrington, M.D., 69 Rodney Street, Liverpool.

Dermatology.—President—Norman Walker, M.D., Edinburgh. *Vice-Presidents*—Dr. Graham Chambers, Toronto; Dr. Harry B. Anderson, Toronto; Dr. James Galloway, London; Ernest Solly, M.D., Harrogate. *Hon. Secretaries*—Dr. D. King Smith, Toronto; Dr. Donald MacGillivray, Toronto; John Campbell Rankin, M.D., 38 University Road, Belfast.

Laryngology and Otology.—President—J. Dundas Grant, M.D., London. *Vice-Presidents*—Dr. George R. McDonagh, Toronto; Dr. H. S. Birkett, Montreal; John Macintyre, M.D., Glasgow; Hugh Edward Jones, M.R.C.S., Liverpool. *Hon. Secretaries*—Dr. David J. Gibb Wishart, Toronto; Dr. Geoffrey Boyd, Toronto; Francis James Steward, M.D., 133 Harley Street, London.

Medicine.—President—Sir Thomas Barlow, Bart., K.C.V.O., M.D., London. *Vice-Presidents*—Dr. Alex. McPhedran, Toronto; Dr. James Stewart, Montreal; Alex Napier, M.D., Glasgow; Wm. Calwell, M.D., Belfast. *Hon. Secretaries*—Dr. Robert D. Rudolf, Toronto; Dr. John Taylor Fotheringham, Toronto; Robert Hutchison, M.D., 22 Queen Anne Street, London, W.

Obstetrics and Gynæcology.—President—A. H. Freeland Barbour, M.D., Edinburgh. *Vice-Presidents*—Dr. James A. Temple, Toronto; Dr. Adam H. Wright, Toronto; Dr. Wm. Gardner, Montreal; T. Arthur Helme, M.D., Manchester. *Hon. Secretaries*—Dr. Frederick Fenton, Toronto; Dr. Kennedy C. McIlwraith, Toronto; Cuthbert Lockyer, M.D., 117a Harley Street, London, W.

Ophthalmology.—President—Robert Marcus Gunn, F.R.C.S., London. *Vice-Presidents*—Dr. Geo. Herbert Burnham, Toronto; Dr. John W. Stirling, Montreal; Joseph Nelson, M.D., Belfast; Arnold Lawson, F.R.C.S., London. *Hon. Secretaries*—Dr. James M. Maccallum, Toronto; Dr. Duncan McLennan, Toronto; Frank Pearson Skeffington Cresswell, M.D., Cardiff.

Pædiatrics.—President—George Alexander Sutherland, M.D., London. *Vice-Presidents*—Dr. H. T. Machell, Toronto; Dr. Allan M. Baines, Toronto; Otto Jackson Kauffmann, M.D., Birmingham; Donald

John Armour, F.R.C.S., London. *Hon. Secretaries*—Dr. E. Stanley Ryerson, Toronto; Dr. Joseph D. A. Graham, Toronto; Ralph Vincent, M.D., 1 Harley Street, London, W.

Pathology and Bacteriology.—President—Professor J. G. Adami, M.D., F.R.S., Montreal. *Vice-Presidents*—D. J. J. MacKenzie, Toronto; Dr. W. T. Connell, Kingston; Dr. Ingersoll Olmstead, Hamilton; Professor Robert Fraser Calder Leith, M.D., Birmingham. *Hon. Secretaries*—Dr. Gideon Silverthorn, Toronto; Dr. Harold C. Parsons, Toronto; Charles Powell White, M.D., London.

Psychology.—President—Wm. Julius Mickle, M.D., London. *Vice-Presidents*—Dr. N. R. Beemer, Toronto; Dr. Charles E. Clarke, Toronto; Chas. Caldecott, M.D., Redhill; Landell Rose Oswald, M.D., Gartnavel. *Hon. Secretaries*—Dr. A. T. Hobbs, Guelph; Dr. Goldwin Howland, Toronto; William Frederick Farquharson, M.D., Garlands, Carlisle.

State Medicine.—President—Dr. F. Montizambert, Ottawa. *Vice-Presidents*—Dr. Charles Sheard, Toronto; Dr. Peter H. Bryce, Ottawa; Hon. Dr. Pyne, Toronto; Sydney Monckton Copeman, M.D., F.R.S., London. *Hon. Secretaries*—Dr. J. Langrill, Hamilton; Herbert Timbrell Bulstrode, M.D., London.

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Reviews and Notices of Books.

PSYCHIATRY. A Text-Book for Students and Physicians. By STEWART PATON, M.D., Associate in Psychiatry, Johns Hopkins University, Baltimore, Director of the Laboratory, Sheppard and Enoch Pratt Hospital, Towson, Md. Philadelphia and London: J. B. Lippincott Company, 1905.

Dr. Paton has done a real service to those truly interested in the study of mental diseases by the production of his book "Psychiatry." From such a well and favourably known scientist,— a pupil of Kraepelin, and a man of wide experience in his specialty, one would naturally expect something above the ordinary, and the volume before us comes fully up to the most sanguine expectations. No doubt the work requires careful and repeated perusal for the assimilation of facts and opinions regarding an intricate and specialized pursuit, and there are points open to debate in various directions, but, taken as a whole, it is a masterly digest of the most advanced knowledge on the subject of insanity.

The chapter on treatment is excellent, though more might with propriety have been said on the all-important matter of prevention, and that entitled "The modern Hospital for the Insane" sets forth very clearly the ideal style of institutions for which our foremost alienists are to-day contending.

Chapter XIV on the much debated disease-form dementia præcox is especially interesting, though in places we fear a student would find difficulty in grasping exactly what is meant. Dr. Paton on introducing the subject very wisely and cogently states: "The fact cannot be too strongly emphasized that in studying this psychosis too much stress should not be laid upon the individual symptoms presented by a patient at any one period of the disease. It is the study of the condition as a whole, including the onset, course, termination, and general symptomatology, which promises the best practical results.

No books evanesce so quickly as medical works; but no physician who has the honour of his calling at heart can afford to neglect the very latest pronouncements of science. It is on this ground that we urge that "Psychiatry" should be widely read and carefully studied. As a work for the specialist, or the student who purposes devoting special attention to the study of mental diseases, its merits cannot be too highly extolled. T. J. W. B.

THE NATIONAL STANDARD DISPENSATORY, containing the Natural History, Chemistry, Pharmacy, Actions, and Uses of Medicines; including those recognized in the Pharmacopoeias of the United States, Great Britain, and Germany, with numerous references to other pharmacopoeias. In accordance with the eighth decennial revision of the United States, Pharmacopoeia, 1905. By H. A. Hare, B.Sc., M.D., Professor of Therapeutics, and Materia Medica, Jefferson Medical College, of Philadelphia; by Charles Caspari, Jr., Ph.G., Phar.D., Professor of Theoretical and Applied Pharmacy in the Maryland College of Pharmacy; and by Henry H. Rusby, M.D., Professor of Botany and Materia Medica in the College of Pharmacy of the City of New York. Lea Bros. & Co., Philadelphia and New York, 1905.

This encyclopedic work succeeds the well-known National Dispensatory of Stille and Maisch, which has long been regarded as a standard work of reference. Under its new editors it has been almost entirely rewritten, and owing to the many recent additions to our knowledge and to our materia medica contains much new material. The information given deals not only with drugs recognized in the pharmacopoeias of the above named countries but also with numerous minor drugs which have

only as yet a local reputation and concerning which little is to be found in ordinary literature. In addition all the common names of drugs or medicinal plants, as well as the botanical synonyms are given. Numerous illustrations of typical drugs have been introduced, many of which have been newly executed for this edition. In the pharmaceutical section full information will be found regarding methods and products, with descriptions and explanations of the most approved apparatus and tests. In the section on action and uses a brief but precise presentation of our present knowledge will be found, and this is made available for clinical purposes by means of an extensive therapeutical index. Throughout the text all weights and measures are given in both the metric and apothecaries systems, and many new tables and lists have been inserted, which place before the reader a vast amount of information in a form most convenient for reference. To the druggist and pharmacist this volume must be well nigh indispensable; to the practising, and especially to the dispensing physician, it will not infrequently prove of great value.

System of Physiologic Therapeutics. Cohen. Vol. VII. Mechanotherapy and Physical Education, including Massage and Exercise. By John K. Mitchell, M.D., and Physical Education by Muscular Exercise by Luther Habrey Gulick, M.D. Blakiston's.

This volume gives a very clear conception of the practical application of massage and methodical muscular exercise. The illustrations are excellent and add materially to the value of the book, giving to the reader a clearer idea of the methods employed than any amount of written instructions could possibly convey. The section on the Schott and Oertel treatment is full, and the limits of the usefulness of these methods are clearly defined. A large amount of space is devoted to orthopedic manipulations and in this chapter the Lorenz method for the reduction of congenital dislocations of the hip is fully described and illustrated. Several good skiagrams showing the change in position of the head of the bone during reduction are given. The book will prove of value not only to the specialist but also to the general practitioner, who has not infrequently the opportunity of seeing acquired deformities in their first stages when remedial measures are most effective.

System of Physiologic Therapeutics. Cohen. Vol. VIII. Rest, Mental Therapeutics, Suggestion. By Francis Z. Dercum, M.D., Ph.D. Messrs. Blakiston's Son & Company.

This book maintains the high standard that has been set by the previous volumes which belong to this system. The author has very clearly set forth the value of rest in the treatment of functional nervous diseases. The chapter on Neurasthenia is especialy interesting and instruc-

tive. This disease is too often treated on so-called general principles. In this volume the rational therapeutic procedures for its different stages are clearly described. Fewer cases of cures in conditions given up by medical men would be reported by quacks, osteopaths and "healers" if the instructions in this volume were carefully followed. The style throughout is pleasing and the methods employed in presenting the various statements is forcible and logical. An interesting chapter is the last one in the book, which is devoted to a short account of mystic and religious methods of sugestion. Here we find an account of mind cure, faith cure and Eddyism. A few paragraphs from Mrs. Eddy's book are quoted *in extenso*. They speak for themselves. The author recognizes the danger attendant on the hold that Christian Science has on the people and advocates its legal suppression. The volume as a whole, emphasizes the value of rest and suggestion in practical therapeutics; either may be used with great benefit to the patient in conditions where such treatment is indicated, but either of these valuable methods may be abused and distinct harm results.

ATLAS AND TEXT-BOOK OF TOPOGRAPHY AND APPLIED ANATOMY. By OSCAR SCHULTZE. Edited, with additions, by GEO. D. STEWART, M.D. 25 coloured illustrations, 22 lithographic plates, and 89 text cuts, 60 in colours; pp. 171. W. B. Saunders & Co., Philadelphia, 1905. J. A. Carveth & Co., Toronto.

This is the best illustrated book of the kind we have ever seen. It is a marvel of the illustrator's art. The book is written for the physician and surgeon, and not for the anatomist. It is a most useful book of reference for the practitioner of medicine. The illustrations are most beautiful, and yet sufficiently diagramatic and not too full to be understandable of detail. In front of each plate is a transparent sheet of paper with the outline of the figure below, to which the physician can add details. The text is very short and simple, containing, however, quite sufficient to explain the pictures. To those who cannot consult the dead subject, this is a most useful work and one which we can thoroughly recommend.

TEXT-BOOK OF ANATOMY. Edited by D. J. CUNNINGHAM, F.R.S., M.D., LL.D., etc. Second Edition. Wm. Wood & Co., New York, 1905.

The first edition of this most excellent work was issued only three years ago, and now a second edition is demanded. This edition has been much improved, many omissions rectified and many new illustrations added. As is known, this work is the product of a number of authors, no less than ten, all of whom have done their work well — one

of the authors, Prof. Birmingham, has recently died, and the revision of his part has been undertaken by the editor, although as he remarks, "there was probably no part of the book which required less revision." The illustrations are particularly good and are, with few exceptions, original. Altogether this second edition is an improvement on the first, and will be sure to prove a popular text-book with students, and bids fair to outstrip in popularity Gray's Anatomy, which has been for years the favourite of students. The first section on Embryology is particularly clear and well illustrated. The section on the brain and nervous system, by the editor, of course, is extremely good, and we see amongst the new matter here, a notice of Prof. J. G. McCarthy's observations on the Hippocampus Major and its central core.

An excellent plan in this work is a short description of the Development and Morphology at the end of each section. We consider this is now the best students' text-book written in English.

HANDBOOK OF ANATOMY. By JAS. K. YOUNG, M.D. 2nd Ed. revised, enlarged. F. A. Davis Co., Philadelphia.

DISSECTING MANUAL; based on Cunningham's Anatomy. By W. H. ROCKWELL, JR., M.D. Wm. Wood & Co., New York.

These two books fall into a very different category from that of the first two. They are meant to be short cuts to knowledge and cannot therefore be recommended.

Young's Anatomy is full of old familiar illustrations, some of them rather the worse for wear. Why students and busy practitioners desire such works we are at a loss to imagine, when so much fuller and better works are always easily to be had. They can only be used as cram books and as compenda for rapid revision, which had much better be done from the student's own notes and his text-books.

Rockwell's Dissecting Manual, based on Cunningham's Anatomy seems to us to be a work of supererrogation, and the student had much better content himself with a good dissector such as the one Cunningham has himself written. It is without illustrations and is merely a synopsis of Cunningham's Anatomy, and the first edition at that. We can recommend neither of these books.

PRACTICAL MASSAGE IN TWENTY LESSONS. By HARTVIG NISSEN, Instructor and Lecturer in Massage and Gymnastics at Harvard University Summer School. With 46 original illustrations, 168 pages, 12 mo. Price, Extra Cloth, $1.00, net. F. A. Davis Company, 1914-16 Cherry Street, Philadelphia.

This little book describes as well as any book can the various processes which go by the name of massage. In the introductory history of this

important method of treatment there is a brave display of learning, and the author shows a familiarity with such names as Kong-Fu, Medea, Iccus, Herodicus, Diocles, Praxagoras, Mercurialis. Nor is he unfamiliar with important modern personages: "time and again I have been called in the middle of the night to apply such treatment to men of high standing and great mind. Fourteen and fifteen years ago I frequently had to shut off the light in the White House in Washington, telling the officers at the door, as I left, that the President was asleep."

LABORATORY MANUAL OF PHYSIOLOGY. By FREDERICK C. BUSCH, B.S., M.D., Professor of Physiology, Medical Department, University of Buffalo, New York. William Wood & Co.

This book contains a conscientious account of most of the experiments performed by students in the physiological laboratory, and also of many more elaborate experiments, such as are usually shown as demonstrations by the teaching staff. It contains more experiments than could well be overtaken in an ordinary medical course; but by a certain amount of judicious selection and omission an excellent course could be based on this book. There is nothing especially original or striking about it, but the experiments on the whole are very clearly presented. In some cases a little theory is given by way of introduction, but the results of the experiments are as a rule omitted, the object being not to prejudice the student before he makes his own observations. We do not think that the ideal practical book has yet been written. A necessary preliminary, we think, would be an agreement between the teachers of the principal medical schools as to some standard course in practical physiology for medical students. A book could then be written containing less than half the number of experiments contained in the volume before us, but explaining the theory and discussing the conclusions much more fully than has been done in any book on experimental physiology with which we are acquainted. W. S. M.

DISORDERS OF THE METABOLISM AND NUTRITION; A Series of Monographs. By PROF. DR. CARL VON NOORDEN, Physician-in-Chief to the City Hospital, Frankfort-on-Main. Authorized American Edition, translated under the direction of BOARDMAN REED, M.D. Part VII. Diabetes Mellitus. Small 8vo, 212 pages. Price, $1.50. E. B. Treat Co., 241-243 West 23rd Street, New York.

Upon at least six occasions we have called attention to this admirable series of monographs, of which six have already appeared dealing with Obesity, Nephritis, Colitis, Acid Autointoxications, Saline Therapy, and Drink Restriction. The present volume deals with Diabetes in a manner

which is interesting and informing. The most advanced opinion upon the various aspects of this disease is clearly set forth. The experimental evidence is fully considered, and the author's criticism and conclusions appear to us to be remarkably just. The book may be read at a sitting, and it leaves behind a sense of refreshment.

Medical News.

ALEXANDRA HOSPITAL.

The Alexandra Hospital for Contagious Diseases is now built at Point St. Charles, but it will be a few months, before patients can be received, as quite a lot of work in connection with the "finishing off" is yet to be done. When equipped, it will certainly be one of the finest hospitals of its kind, on the continent.

It is a matter of some regret however, that it is situated so far from the centre of the city; but on the other hand, it is an ideal place for an hospital in summer time. Its proximity to the river ensures a cool breeze and the convalescent patients can enjoy plenty of fresh air so necessary in the recuperation from such diseases as scarlet fever and diphtheria.

The buildings are of red brick and are arranged somewhat in the form of a cross. In the centre is the kitchen building; behind this is the scarlet fever pavillion and in front the administration buildings, while on one side of the kitchen is the diphtheria building and on the other the building for measles.

All connect with the central kitchen building by means of bridges. There is, therefore, no direct connection between the different infectious portions of the hospital.

The buildings are three stories high; the upper storey for the nurses; the others, one each, for female and male wards. These wards are subdivided for acute and non-acute cases.

In the administration building besides offices, apartments for the medical staff, etc., are to be found the observation ward for doubtful cases, and the erysipelas ward.

There are separate buildings for the mortuary and chapel, acetylene gas plant and the laundry. The laundry is divided into two portions, one for the staff and the other for the patients, with a disinfecting plant in each.

All sewage will be thoroughly disinfected before leaving the hospital grounds. The ventilation of the hospital is as perfect and thorough as possible, there being a separate chute to each bed.

As little wood as possible has been used in the course of construction so that the hospital is as fireproof as it can be made.

MONTREAL GENERAL HOSPITAL.

The quarterly meeting of the Montreal General Hospital was held on November 21st, 1905.

The report of the medical superintendent showed that during the quarter ended September 30th, 874 patients were treated to a conclusion. There were 64 deaths, of which 31 ocurred within three days of admission, making the mortality rate for ordinary hospital cases 3.76 per cent. The aggregate number of hospital days was 18,088, an average detention per patient of 20.68 days, the average number of patients per day being 192. In the outdoor department there were 11,410 consultations during the quarter, as compared with 10,541 for the corresponding period of last year.

The president submitted the report of the committee of management, which stated that the receipts for the quarter had been $15,818, an increase of $800 over the corresponding quarter of 1904. The expenditure for the quarter had been $24,021, a decrease of $266, but the expenditure was $8,203 in excess of the revenue.

The following were elected on the medical staff: Oculist and aurist—Dr. J. W. Stirling. Assistant oculists and aurists—Drs. Richard Kerry and S. H. McKee. Out-door physicians—Drs. C. A. Peters, A. W. Gordon, B. W. D. Gillies and A. C. P. Howard. Out-patient surgeons—Drs. A. T. Bazin, A. R. Pennoyer and E. M. von Eberts.

On motion of Dr. Shepherd, Dr. J. J. Gardner was placed on the consulting staff of the hospital.

ORDER OF ST. JOHN.

Col. C. Bowdler, C.B., a member of the Executive Committee of the St. John Ambulance Association, recently appointed "Special Commissioner," who, with the sanction of H. R. H. the Prince of Wales, Grand Prior of the Order, is visiting Canada, delivered an address in the Victoria Rifles Armory, 16th Nov., 1905.

The object of Col. Bowdler's visit is the formation of Ambulance Brigades throughout Canada.

In England, the St. John Ambulance Association is well known. Certificates of instruction in "First Aid Work" have been given to about 11,000 men and 2,000 women. The holders of these certificates keep up their knowledge by an attendance upon at least 12 lectures a year as well as submission to re-examination.

In Australia, New Zealand, and South Africa, the association is well

started and it is now the wish of the executive to have a well equipped organization in this country.

The need for such an organization is quite well understood, as all know how important it is, that intelligent "first aid" should be rendered to an injured individual before the arrival of the surgeon.

There is ample evidence of the efficient manner in which the members of the St. John Ambulance Association did their work in South Africa during the war. Over 2,000 men enlisted as privates in the Royal Army Medical Corps and served their term of enlistment.

MONTREAL MATERNITY HOSPITAL.

The annual meeting of the Montreal Maternity Hospital was held in the new building on the 21st November. The annual report of the secretary showed that the hospital was in a good financial position. The demands upon it had increased to such an extent as to make it necessary to increase the number of permanent nurses by two, making a total of eight nurses, five of whom were from the Royal Victoria Hospital, and two from the Montreal General. The number of cases treated during the year was 401. The paying in-door patients numbered 207. Divided into religious denominations, the Protestants numbered 180; Catholics, 137, and Hebrews, 84.

The treasurer reported a balance of $2,072 in the treasury. Dr. J. C. Cameron, the medical director, reported that only two deaths had occurred among the patients, and the death in each case had been due to a cause foreign to the work of the hospital. A total of 379 children had been born.

The new Maternity Hospital will be officially opened on Friday, December 1st, by Their Excellencies Earl and Lady Grey.

ROYAL VICTORIA HOSPITAL.

Monthly report for October: Patients admitted during month, 275; patients discharged, 273; Patients died, 10; medical 74; surgical, 130; ophthalmological, 28; gynœcological, 37; laryngological, 6. Out-Door Department—medical, 724; surgical, 341; eye and ear, 643; diseases of women, 98; nose and throat, 333; total, 2,139. Ambulance calls, 74.

Dr. William Gardner was elected an Honorary Fellow of the American Gynæcological Society at the last meeting held at Niagara Falls.

The death is announced of Dr. W. E. Smith, of St. Thomas. Dr. Smith graduated from Victoria College, Toronto, in 1863. He commenced practise in Carlisle, where he remained ten years, and went to

St. Thomas in 1872. He was appointed surgeon of the Canada Southern Railway in 1872, when the road was being constructed. He was also chief physician of the Railroad Hospital Association and was consulting surgeon of the Toronto, Hamilton & Buffalo Railway.

Dr. James Herbert Austin died on November 5th, 1905. He was a graduate of Toronto Medical College in 1894, and until two years ago, when he gave up, owing to ill-health, practiced in Kansas City. He was 34 years of age.

Dr. A. H. Simpson, formerly of Winnipeg, died at Salmon Arm, B.C., on October 25th, 1905. Dr. Simpson was born in 1869, and was a graduate of Manitoba Medical College in 1893.

Dr. Thomas Clarke, of St. Catharines, died, November 5th, 1905, in the 76th year of his age.

Dr. Landry, of Eel Brook, Nova Scotia, died, November 6th, 1905, at an advanced age.

Retrospect of Current Literature.

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Krogius, Prof. Ali. "Treatment of Angioma Arteriale Racemosum of the Scalp." *Ctbl. f. Chir.*, 30th September, 1905.

The treatment of this condition is well known as one of the most difficult problems in surgery. Methodical compression, and ligation of the afferent vessels have been useless; cauterization may be followed by dangerous secondary hæmorrhage; injection of styptics has been shown to be dangerous and frequently inefficient. Excision is a difficult operation on account of extreme bleeding and leaves behind it a large defect which must be filled by plastic operation. Krogius has devised a method for the cure of these lesions which recommends itself by its simplicity, and, so far as can be judged from the one case in which he used it successfullly, by its efficiency also. The method consists briefly in surrounding the whole pulsating area with subcutaneous ligatures, thus cutting off the blood supply from the periphery. A shrinkage follows, and a fresh circle of ligatures is applied at the periphery of the area still pulsating; and so on, repeating the operation if necessary several times. His case showed a pulsating tumour, 17 cm. x 11 cm. in its diameters, and the result was perfect. Technically, Krogius inserts a ligature which embraces all the tissues between the skull and the subcutaneous tissue, using two needles, one with a large curve and the other with a very slight one. The bleeding of the punctures is controlled by the tying of the ligature or by compression.

CRAIG AND ELLIS. "An Experimental and Histological Study of Cargile Membrane." *Annals of Surgery*, 1905, No. 6.

Cargile membrane is prepared from the peritoneum of the ox. It has been lately highly recommended by Robert Morris for the covering of raw areas of the peritoneum, in laparotomies, in order to prevent adhesions. Morris's experiments, published two or three years ago, were decidedly favourable in this respect. Craig and Ellis have repeated his experiments and came to the following conclusions. The longest time that the membrane lasted unchanged was 14 days, the shortest 3 days; implanted into muscles, tendon or nerves, it is reabsorbed in a decidedly shorter time; if chromicised it lasted longer than unchromicised. Upon peritoneal surfaces exposed to peristaltic movements the membrane remained adherent only if sutured in place. The membrane is not able to prevent adhesions in the abdominal cavity, on the contrary, it seemed to be irritative. The substance, however, may be used for the enclosure of tendons and nerves which lie exposed in wounds, with the object of preventing adhesion of these to the surrounding structures. In intracranial operations, in which the membrane has been recommended as a substitute for the dura, only the chromicised membrane is to be considered, inasmuch as the unchromicised is difficult of manipulation on account of its smoothness. Re-absorption of the membrane is accomplished by fibrillation, and the inwandering of cells from the surrounding tissue.

LAUENSTEIN AND REVENSTORF. "Concerning Small Hæmorrhages in the Mucosa of Appendices removed by Operation." *Deutsch. Zeit. f. Chir.*, Bd. 77, p. 40.

Fraenkel, Prosector of the General Hospital at Eppendorf, gave utterance to the opinion, in a recent discussion, that in the majority of the resected appendices the mucosal hæmorrhages that are so frequently seen are fresh, and are to be considered as the result of ligature during removal. The authors dispute this idea and attempt to prove it erroneous by an examination of 150 operations for appendicitis performed by Lauenstein. First, Fraenkel's observation is improbable in that the appendix during operation for removal does not come in contact with forceps or with ligature. Lauenstein ties off first the mesentery of the appendix and afterwards the appendix at its base; that hæmorrhage should occur in a procedure of this sort is hardly likely. In the second place the hæmorrhages in question are found only in the mucosa, never in the serosa or subserosa, which would be hardly comprehensible if the tying off of the appendix were the real reason of the hæmorrhage. Finally, the frequency with which these hæmorr-

hages are found, and especially their pathological relation to the various diseased conditions of the appendix which call for its extirpation, speak against Fraenkel's observation. It is, therefore, to be concluded that the hæmorrhages are caused by an inflammatory condition alone. This inflammatory condition is found microscopically in the majority of cases extending throughout the appendix wall.

MEYER WESTFELD. "Cardiolysis in Adhesive Mediastino-Pericarditis." *Munch. Med. Woch.,* October 3rd, 1905.

Several months ago we reviewed in these columns three cases of this operation, devised by Brauer in 1902, for the relief of a heart which is overworked by reason of pericardial adhesions to the anterior thoracic wall. The present case is an addition to the still rather small list of operations of this nature. The symptoms of adhesive pericardial mediastinitis in this case were characterized by an extreme systolic indrawing of the thorax wall at the apex, as well as by a diastolic collapse of the neck veins. There were also present evidences of failure of compensation, such as chronic bronchitis, pseudo-cirrhosis of the liver, due to stagnation, ascites, and "stauungs-spleen," cyanosis, dyspnœa and œdema. The operation consists in the removal of the 4th and 5th ribs from the costal cartilage to the anterior axillary line, and the loosening of the adhesions of the pericardium to this area. The operation was well borne and the result extremely good. Further details deserve reading in the original. The article contains a full bibliography.

A. I. MACKINNON, M.D. [McGill, 1893], "Suprapubic prostatectomy." *Medical News,* August 19th, 1905.

The following points are insisted upon:—

1. Suprapubic cystostomy under local anesthesia instead of aspiration as an emergency measure in cases of complete retention from enlarged prostate.

2. The simplicity and freedom from complications and sequelæ of the operation when performed by the suprapubic method.

3. The virtue of packing the bladder with iodoform gauze.

MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY, H. A. LAFLEUR AND W. F. HAMILTON.

JAMES BARR. "Alcohol as a Therapeutic Agent." *British Med. Journal,* July 1, 1905.

In June last Dr. Barr, as president of the Lancashire and Cheshire

Branch of the British Medical Association, addressed the meeting in Liverpool on the subject of Alcohol as a Therapeutic Agent. Along with many others of wide clinical experience, Dr. Barr raises his voice against the too general use of alcohol as a drug. He admits in his opening remarks that the use of alcohol is a threadbare subject, difficult to present in any new light. He desired to approach the subject from the physiological standpoint—and to avoid all reference to the more definite toxic action of alcohol, confining his remarks to the effects of usual medicinal dose, say four to ten ounces of brandy containing 40 per cent. of absolute alcohol in twenty-four hours. Dr. Barr summarizes the effects of repeated medicinal doses of alcohol on the circulation as follows: It causes dilatation of the arterioles and of all the arteries well supplied with muscular fibres, owing to its paretic effect on the vaso-motor nervous system, and its direct action as a protoplasmic poison on muscular fibre. The systolic blood pressure is lowered, the systolic output from the heart is diminished, and the cardiac energy is wasted in pumping blood into relaxed vessels, the large bounding pulse with comparatively short systolic period, which gives a deceptive appearance of vigour and force in the circulation is due to a large wave in the dilated vessels. Long-continued use of the drug, even in moderate quantities, leads to fatty-degeneration of the cardiac muscle and chronic meso-arteritis with permanent loss in the elasticity of the arteries."

Alcohol is a sedative and not a stimulant to the nervous system. Reflex action is lessened, pain assuaged and thus alcohol may be used as a soporific in highly sensitive conditions of the nervous system.

The writer states that almost the only use for alcohol in pneumonia is as a soporific, and when given for that purpose he prefers a light draught of beer or stout, containing 4 to 5 per cent. of alcohol. As such it should be given about 9 or 10 o'clock at night and not during the day.

Alcohol in typhoid fever, Dr. Barr says, induces upon the heart an effect similar to that produced by the typhoid toxin. "The most severe case of typhoid fever can be better treated without alcohol than with it, and the conditions demanding its use in this disease are very few and far between." In convalescence a little port wine may be useful in relaxing or lessening peripheral resistance, and thus helping a heart weakened by fever.

In tuberculous diseases, acute specific diseases and in diseases of the nervous system, the writer sees no indications for alcohol. In shock and collapse it may give a temporary sense of relief, but from its marked effect in lowering blood pressure it must work mischief in both these

conditions. Dr. Barr maintains that alcohol is a very common cause of bronchitis.

COLEMAN, WARREN and BUXTON, B.H. "On the Diagnosis of Typhoid Fever by Means of Cultures from the Blood." *Proceedings of the New York Path. Soc.*, N.S., 4. 1904, p. 10.

"In an address given by us in 1899,* we called attention to the fact that the failure of bacteriologists in general to gain cultures from the blood of patients was due to neglect to take into account what should be a familiar fact, namely, the acquirement by blood of active bactericidal properties when it is shed, in consequence of the disintegration and dissolution of its leucocytes: that consequently such blood if but slightly diluted still destroys any bacteria present within it, so that the only satisfactory method of obtaining blood cultures is by taking a relatively small amount of blood and introducing it forthwith into a relatively large amount of sterile broth, thereby alternating the bactericidal substances to such a degree as to render them inoperative. We recommend that the blood be diluted from 100 to 200-fold. Whether this advice has been taken to heart, or as is probable, the same conclusion has been reached in several quarters simultaneously, certain it is that since 1900 various observers in different countries have taken up the method here indicated of making blood cultures from the living patient and in no case with more remarkable results than in connection with typhoid fever."

It is true that prior to 1900 isolated instances have been recorded in which the bacilles of typhoid had been gained from the blood, but these were the exceptions—the rare exceptions. The common feeling was that the bacilli were not present in the circulating blood although their presence in the spleen refuted that teaching. Since the technique above indicated has been followed, and more particularly from 1902 onward, observer after observer has published series of cases in which a large percentage of positive results has been gained until Busquet carrying the principle still further and adding a few drops of blood to 300 cc. of broth has gained 83 positive results in 83 consecutive cases. Colemand and Buxton, employing the dilution we indicated obtained 34 positive results in 60 cases. Castellani using apparently an intermediate dilution was successful 12 out of 14 times. The indications are that Busquet's method is to be followed. Altogether, bringing together the more recent statistics our authors show that 55 observers studying 644 cases of the disease obtained a positive result in 75 per cent. The table they give is open to the criticism that no less than sixteen observers record results

* On Latent Infection and subinfection. *Journal of the Am. Med. Assoc.*, Dec. 23rd, 1899.

in only one or two cases. These should, we think, have been left out, for some at least may be regarded as chance observations. In the first week 93 per cent. of the results were positive: in the second 76 per cent.: in the third 56.52per cent.; in the fourth, 32.72. The indications are that employing proper methods the bacilli can surely be found in more than 95 per cent. of cases between the fourth and twenty-first day, and that this method is capable of affording a diagnosis when the serum reaction has not yet developed. That this is so was noted in 10 per cent. of the recorded cases.

Coleman and Buxton very advisedly lay stress on the fact that this is a method which cannot come into general use by the practitioner or the Board of Health. It needs a trained man to obtain the blood in the first place and that blood must be transferred immediately to the flasks and diluted. There is no reason, however, why in our larger hospitals this should not become a routine method of diagnosis. And on the side of the patient it may be noted that the use of ethyl chloride, makes the withdrawal of a few drops of blood from a vein absolutely painless.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The first meeting of this Society for the session 1905-06 was held in the Society's rooms, Friday, October 6th. After the routine business and the reading of the reports of the retiring officers a smoking concert was held. Over sixty members were present.

The second meeting of the society was held Friday, October 20th. Dr. F. R. England President, in the chair.

In proposing that a resolution of condolence be sent to the family of the late Dr. Buller, Dr. Birket said: "The society has lost in Dr. Buller one of the ablest oculists which Montreal has seen, and I may say Canada at large. His loss is irreparable. As a man in his work he was unequalled, and he showed undoubted genius in whatever he did."

Dr. Girdwood: "I should be glad to second the motion. What Dr. Birkett has said is perfectly true, and, besides that, I feel the loss of an intimate friend, and a man I had learned to respect and love."

SPIROCHETA PALLIDA.

C. B. Keenan, M.D., gave an account of the finding of this organism in a congenital syphilitic case, and presented stained slides of it. The report of this case appears at page 889.

BOTHRIOCEPHALUS LATUS.

H. A. Lafleur, M.D. The specimen which I present to-night was obtained from a child between seven and eight years of age. It was at once obvious that it was not an ordinary tape worm, but resembled the Bothriocephalus. Closer examination in the laboratory showed this to be the case. As you will notice the segments are considerably shorter and broader than those of the tænia, and one can see in the centre of each segment the dark, brownish black body of the uterus, often called the uterine rosette. Under the microscope can be seen the ova of the parasite, which are of a brownish colour, and are covered with a very thin shell, the inside of the ovum being filled with a mass of yolk cells. Some of the ova showed the lid or operculum detached. The head of the ova showed the lid or operculum detached. The head of the worm was missing, and administration of Tanret's pelletierine with a view of bringing it away, failed to do so.

The case is particularly interesting as the child was born in this country and has never travelled outside of the Province of Quebec; moreover, I have questioned the mother carefully as regards the possibility of the child having eaten imported fish in any form, smoked, dried or salted, and she assured me that they never ate such imported food, that they did not use caviare, which was forbidden by their church. I think the inference is justified that this is a case of Bothriocephalus latus originating in this country. The patient spent the summer in the Laurentians, and was accustomed to eat a good deal of fresh fish, particularly pike, doré, perch and trout. Osler says no case has been reported hitherto which originated in America, there being always a suspicion that the patients had contracted the disease in other lands or had eaten imported fish. Dr. Hamilton, I think, reported a case a few years ago which originated in this Province. The common area of distribution of the Bothriocephalus latus is along the shores of the Baltic, in French Switzerland, northern Italy, and Russia; the parasite is also fairly common in Japan.

J. G. Adami, M.D. pointed out that with the great number of Finns arriving on this Continent each year from that Baltic coast, we must be prepared to find these cases more frequently. It is fresh water fish that form the intermediate host of the Bothriocephalus, and with the influx of these foreigners living around the shores of our great lakes and rivers it is at least likely that our fish will come to harbour the parasite.

W. F. Hamilton, M.D. The case I had was that of a young man who came to me for treatment at the hospital and a week later brought the worm in a bottle. The appearance of the parasite attracted our

attention, and upon careful examination the dark uterine rosettes and other characteristics were observed, particularly the characteristic ova. The specimen is in the pathological museum of McGill College. The head was not found. One point of interest was that this young man was a fisherman, a French-Canadian, hunting and fishing throughout the summer on the lakes of northern New York. He prepared his own food, cooking it by the fire in the open, and partaking largely of fish.

F. J. Finley, M.D., reported a case of myxœdema in the male. The report appears at page 890.

MYXŒDEMA IN THE MALE.

Ridley MacKenzie, M.D. I missed the diagnosis of this patient's condition in the Outpatient Department. I thought it was a case of Bright's disease and sent him into the ward, notwithstanding the fact that the urine was negative. As to albumen it was interesting to note the very rapid improvement after the thyroid extract.

W. F. Hamilton, M.D. I would like to ask if there was any previous history of enlarged thyroid. We had a patient who gave a distinct history of thyroid enlargement with subsequent diminution, associated with periods of lassitude and œdema and intermittent albuminuria and glucosuria. It looked as if metabolism had been in some way interfered with and, thinking that an early type of myxœdema was present, thyroid treatment was recommended. There was some improvement.

TUMOUR OF THE TONGUE.

Ridley MacKenzie, M.D. The patient from whom the tumour was removed came to me with a request to administer an anæsthetic for the removal of her few remaining teeth. She stated that she had had the tumour all her life, and at four years of age an unsuccessful attempt was made to remove it without an anæsthetic. It lodged in the back of the mouth, its short pedicle allowing it to fall backwards, and sprang from the dorsum of the tongue on the left side close to the raphe midway between the tip and the base. Its presence did not interfere with the giving of the anæsthetic and it was easily removed by tying the pedicle with catgut. There was but little bleeding. Its chief clinical interest is that it did not interfere very much with deglutition, and the speech was no more altered than one would expect in the absence of teeth.

J. G. Adami, M.D., had made a brief search and so far had not encountered any similar case of osteoma of the tongue. It was a remarkable specimen and puzzling also from all considerations. The first idea that came to one was that it was of the nature of an inclusion tumour. Its occurrence in the median line suggested that during

development and the coming together of parts, chondrogenic and osteogenic cells from some neighbouring region became nipped in and enclosed.

TETANUS THERAPY.

E. W. Archibald, M.D., read a paper upon the present status of Tetanus Therapy with some notes of a case. The paper appears at page 874.

James Bell, M.D. This is a very interesting subject, and it is to be hoped that something will develop along these lines in the way of practical utility. Up to the present it seems that little has been accomplished. A great deal of experimentation has been done, on the human subject as well as in the laboratory, but, after all, when we analyze these cases we come back to what we have known for a great many years, namely, that the milder and more chronic cases frequently recover but those more acute die in spite of all that is done for them. One thing is clear,— that the bacilli remain at the site of infection, largely at any rate; and only their toxines are carried into the nervous system and lead to the spasms. This leads to one practical result, namely, the removal or excision of the infected area. As to the question of local tetanus, when one comes to consider the clinical picture one sees that in a good many cases this is corroborated. One case which was recently under my care was a little girl who had run a nail into the ball of her thumb. She had quite severe tetanus, although there were several days of incubation before full development, and it was really one of the comparatively chronic cases. She recovered, but a marked feature was that although she had general tetanus, from the very first and long after the general spasms had ceased there was still spasms of the arm, even after she got perfectly well. Injection into the nerve trunks, at least in Dr. Archibald's case, did not seem to have done anything towards saving the patient's life, and probably never would in such a severe case. Perhaps we are too prone to reason that if a patient recovers it is due to the treatment which we have carried out.

F. J. Shepherd, M.D. Dr. Archibald's paper shows what good work has been done in the laboratory. I have used injection of antitoxine in two cases of tetanus which were both mild. One occurred this summer, and was a man who was thrown from a cart and was considerably bruised and torn about the face. He developed acute trismus. At the time he entered hospital he had a purely local condition with some spasm of the sterno mastoids of one side, and partial paralysis of left facial. He was given injections (several daily) into the spinal canal of 10 cc. of antitoxin and also chloral. He commenced recovering

almost immediately, though very slowly, day after day his mouth could be opened more widely. He had a relapse for a time and was worse but eventually got perfectly well. The other case occurred last year; it was that of a boy who had marked trismus and had once or twice opisthotonus with partial convulsions. He was treated in the same way and got well, though I am not in a position to say that the anti-toxine was responsible for the favourable termination. It seems to me that if you remove the source of the manufacture of the toxine some good might be done if it has not gone too far. Dr. Archibald is to be congratulated on the bold and logical way he treated his case and deserved to have a better result.

A. E. Garrow, M.D. During last month I had a case of subacute tetanus, a man who fell through a pane of glass and cut his arm. Eleven days after the injury, when the wound was perfectly healed he entered the hospital with a well marked condition of tetanus. The most marked feature of the case was the local tetanus of the arm, which kept it constantly in a position of semi-flexion. Exposure of the wound showed a good deal of necrotic tissue underneath the healed flap. The wound was dealt with as an open wound and he was given for the first 15 days some 560 cc. of antitoxine subcutaneously, and during that time he had varying periods of improvement, but in spite of the wound continuing to granulate up he would have days of considerable spasm, not only local of the arm, but general tetanic symptoms. At this time I tried the effect of intra-spinal injections of 10 cc. introduced between the 4th and 5th lumbar spines. This was not followed by any escape of spinal fluid nor were there any sensations in the lower limbs. Within eight hours of the first injection the patient's tetanic symptoms had improved very much, in fact more so than at any period; all other treatment had been suspended in order to note the improvement. Although he had been getting 20 to 30 cc. each day up to this time, four intra-spinal injections were apparently successful in curing the disease; the local spasms disappeared within 36 hours from the first injection. No attempt was made to injure the cord or to bring on irritation in any way and the improvement was marked and I could not help feeling at the time that the intra-spinal injection was the means of arresting the disease.

Ridley MacKenzie, M.D. I would like to ask what were the bacteriological findings in this case of Dr. Archibald's?

Dr. Monod. As regards the prophylactic treatment; every patient brought into my father's hospital in Paris, into the accident ward, receives 5 cc. of antitoxic serum, and if the patient has been wounded in a special manner, as for instance, at abbatoirs, etc., he receives a 5 cc.

dose every day for four days, and in some seven years there has not been one case of tetanus in my father's wards. I have myself been injected three times, and my brother twice, after accidents.

Dr. St. Jacques. We have had three cases of tetanus in four years at the Hotel Dieu Hospital, the last one was brought in in a very bad state, comatose, and died within 24 hours. The second case was a man who had been wounded in the thumb and came to have it dressed on the third day after the accident. On the 12th day after the accident the first signs of contraction of the muscles occurred; on the 15th he entered the hospital with contraction of the muscles of the neck, pulse 80 to 85, temperature 100. Amputation of the thumb was decided and, on examination, was found staphylococci, streptococci and almost a pure culture of the tetanus bacillus. That afternoon the patient was given 20 cc. of serum subcutaneously, and for the next two days he had serum and chloral. On the third day, that is the 18th after the accident, an injection under the skin of one per cent. carbolic acid was given 25 minims of the solution every two hours. On the next day the symptoms gradually began to subside; the temperature on the third day of the carbolic acid treatment went up to 103, but the pulse was never higher than 116. At no time was there any albumin in the urine. Chloral, ℥i was given by the rectum, at night time only. On the 10th day, the treatment by carbolic acid was set aside, as symptoms were improving, and three days later the temperature was down to 99 He entered on the 15th of December and was discharged cured on the 17th of January. The third case was a stable man hurt on the nose; symptoms developed on the 4th day after the accident and he came in the next day; no bacteriological examination was made of the wound, but he was put at once under the carbolic acid injection hypodermically. There was at that time contraction of the muscles and neck, but from the very day after the injection of the acid the symptoms subsided and within ten days the patient was altogether better of the tetanic symptoms.

As to lumbar puncture producing, at times, symptoms in the lower limbs, I can report the case of a man aged 40, whom I punctured in the lumbar region, injected 4 centig. of stovaine and got nothing else but analgesic symptoms in the lower limbs until, a few hours afterwards, when the man developed in the right limb very acute pain, which subsided within 24 hours. The second case which I treated similarly with lumbar puncture and stovaine was a man aged 21; there was here no other symptoms than a complete analgesia, going up as high as the floating ribs; which was the desired result. In a third case, a young girl, aged 19, I made a lumbar puncture, for a "stavungs papilla," with

no effect whatever on the lower limbs, nor any beneficial result to the eyes.

Wesley Mills, M.D. There is a theory in regard to the contraction of muscle to the effect that the change is really one of the interchange or movement of water and this has been extended to the nerve. That is to say, that those changes in the nerve associated with function are chiefly physical, for there has always been great difficulty in detecting chemical changes in connection with the functioning of the nervous system. It occurred to me that whatever there may be in this theory applied widely that possibly it makes the explanation of absorbtion in such a case as tetanus the clearer; and, indeed, the movement of water through protoplasm must play a very important part in both pathological and normal processes. What, after all, seems to be the most important outcome is, that while most of us do not live up to our light, medical or otherwise, Dr. Archibald has lived up to his light surgically to the full, so far as he understands it.

G. E. Armstrong, M.D. If these experiments are confirmed and it is shown that the toxin travels only by the axis cylinders, we have gained a very important point in our understanding and treatment of the disease. There are two or three practical lessons which arise out of this experimental work which we should, perhaps, adopt more readily; one is that in accidents occurring on the streets of large cities and about stables and gardens the wounds should not be treated in anything like a perfunctory way, but one should have in mind that the bacillus of tetanus may be there and should be opened up and treated with germicides which will thoroughly destroy the bacilli in the part. This may be done without undue injury to the tissue and without unduly retarding the process of repair. It has been the rule in my ward in the General Hospital for the last three years that all injuries of this nature receive 10 cc. of the antitoxic serum on admission, after the thorough cleaning of the wound. During that period I have not had in this class of injuries a single case of tetanus and I attribute this to the use of the serum. The inhibitive dose of serum has always been given subcutaneously. Is it necessary to put this antitoxine into the nerve? From the experimental work which Dr. Archibald has put before us it seems evident that the subcutaneous injection has been efficient in the great majority of cases. Cutting down and exposing a nerve is a serious operation, and the prevention might not be greater. The use of the antitoxine as a therapeutic agent in the treatment of tetanus is another matter altogether. It would in that case, I think, be wise to inject the nerve or nerves above the seat of injury, thus blocking further entrance of the poison. Of the injection into the cord

itself, more experience is needed to determine its usefulness. I cannot see that an injection within the spinal meninge should pass any advantage over a subcutaneous injection.

A. E. Garrow, M.D. I would like to say that Dr. Keenan found the tetanus bacillus in the grey necrotic material in pure culture in the specimen of the case to which I referred.

W. F. Hamilton, M.D. With respect to the occurrence of tetanus after vaccination, a brief *resumé* of the epidemic of 1901 might be of interest. The majority of the cases were in New Jersey and Pennsylvania; only two developed in Canada and two in England at the same time. There were 67 positive cases and the balance of a possible 95 were throughout the other parts of America. It was pretty clearly shown at that time that that variety of Vaccine, marked E, had a larger number of cases following its use than any other, and that subsequently, characteristic bacilli were found and demonstrated to be present in the vaccine, so the inference was fairly clear that the infection with tetanus was not a secondary infection, but one coming from the vaccine itself. As regards this patient, Dr. Morrison told me that her sister was also vaccinated with the same vaccine but no symptoms whatever developed.

E. W. Archibald, M.D. : In view of the large number of cases of tetanus which are apparently doomed from the very outset to a fatal issue in spite of all our efforts, Dr. Bell's remarks, tinged with pessimism as they are, seem in a sense justified. Nevertheless, when animal experimentation brings us as far on in accurate knowledge as is the case in the present instance, are we not justified in these severe cases in following the lead that is offered, even if it involve procedures which appear more or less severe, such as that of puncturing the cord high up? The more so, inasmuch as, in the few cases in which this last has been done, no ill-results seem to have been caused by it. The absolute proof of the value of any new treatment can only be brought upon the basis of a large number of unselected cases. This, as yet, is impossible for the intraneural and intramedullary injection of antitoxin, which must base its claims largely upon animal work. Yet the latter is so convincing that, in my opinion, we are compelled logically to apply the principles gained by it to the human, of course within reasonable limits, and with due judgment as to the severity of the case and the necessity of radical procedures.

Local tetanus, as Dr. Bell remarked, does not seem to be so infrequent as the general impression would have it. It has appeared, in our experience, in the arm, and not in the leg; perhaps because the former has the shorter neurone. In the last three cases at the Royal Victoria Hospital,

the spasm has appeared first in the arm showing the lesion; in the last case coincident with trismus.

Dr. Monod's experience as to the prophylactic value of the serum corresponds entirely with reports from other quarters. Yet it must be remembered that, occasionally, tetanus develops in spite of the serum.

As to the bacteriological findings in this case, cultures yielded no growth, but smears showed the presence of one or two suspicious-looking bacilli. Mice ought to have been inoculated, but were not.

Dr. St. Jacques has called attention to the Baccelli treatment with carbolic acid injections. I disregarded this part of the subject in the paper for lack of time; but some investigation of the method has left me with the impression that it has failed to prove its claims, although it may attain possibly some slight reduction of the general mortality. One critic has remarked the curious fact that outside of Italy no one can get the results with the Baccelli treatment that the Italians get. Italian observers claim the asounding mortality of only 20 per cent. Indeed, I notice in a very recent report that Bacelli himself claims a mortality of only 10 per cent. in 200 cases. Of Dr. St. Jacques' cases, only one can be said to have been at all severe.

The third regular meeeting of the Society was held November 3rd, Dr. F. G. Finley, Vice-President, in the Chair.

RUPTURE OF THE EYEBALL.

W. G. M. Byers, M.D., exhibited four patients who had been treated for rupture of the eyeball, and gave notes of each case.

SILVER SUTURE IN PRACTICE.

A. E. Garrow, M.D., read a report upon fracture below a former fracture treated by silver wire suture.

PARANEPHRIC CYST.

J. M. Elder, M.D., read a case report of paranephric cyst simulating floating kidney. This case is reported at page 894.

COLLES' FRACTURE.

G. P. Girdwood, M.D., gave a demonstration of Colles' fracture as seen by X-Rays.

BACTERIOLOGY OF CONJUNCTIVITIS.

S. H. McKee, M.D., read a paper upon the bacteriology of conjunctivitis. This paper will appear in the next issue of the Journal.

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